Effects of Helping on State Authenticity Versus Recalled Authenticity

Clare M. Allan
MSc in Psychological Research Methods
The University of Edinburgh
2011

Abstract

This study focuses on the under-researched subject of "state authenticity", the experience of expressing one's true self. The 2 major hypotheses of the causes of state authenticity are tested: behavioural content versus consistency with personal traits. Investigations examine the proposal that behaviour expressing values, specifically "helping others" increases state authenticity, regardless of an individual's own helpfulness-traits. Using a web-based survey methodology, 238 participants were randomly assigned to a helping or non-helping condition and immediately thereafter reported their state authenticity. To test the possibility that reports of state authenticity are affected by timing, 2 weeks later participants retrospectively reported their previous authenticity. Contrary to expectations, no significant differences were found between helpers' and non-helpers' state authenticity at the time of the helping. However, both conditions reported increased recalled authenticity, with helpers reporting greater increases than non-helpers for the recalled true self and authentic living. Helpers' increased authenticity was associated with behavioural content rather than traits. Discussions cover the possibility of classes of authenticity with differing needs for reflection, while the relevance of behavioural content to authenticity is considered in terms of adaptive functionality. Alternative interpretations cannot be ruled out and suggestions for future work are included.

Contents

Acknowledgements

I would like to express my gratitude to my supervisors, Dr. Alison Lenton and Dr. Letitia Slabu, for the hours of patient guidance and expert advice they gave me.

The study of authenticity has a fine pedigree; it began with the ancient Greeks and is a theme many great minds have since pondered (Trilling, 1972). However, regardless of its impressive history, and perhaps because of it, only in recent years has there been any empirical investigation of authenticity (Koole & Kuhl, 2003). This has left a number of fundamental questions unanswered. Empirical work has concentrated on authenticity as a dispositional trait (Lenton, Bruder, Slabu, & Sedikides, 2011), and yet, surprisingly little is known about the moment-to-moment experience of authenticity. Therefore, the current study focused on state authenticity, with the aim of expanding understanding of this understudied area.

Along with improving our theoretical understanding, the study of authenticity may also have important practical outcomes. Studies have consistently shown authenticity to be associated with good mental health (Ito, Horikoshi, & Kodama, 2009) and psychological well-being (Wood, Linley, Maltby, Baliousis, & Joseph, 2008). Correlations have been found with a number of important attributes including: self-esteem, hope, need satisfaction, adaptive coping styles and meaning in life (Harter, 2002; Heppner et al., 2008; Kernis & Goldman, 2006; Schlegel, Hicks, Arndt, & King, 2009). From the mounting evidence, it is clear that authenticity has a key role in adaptive psychological functioning. Therefore a comprehensive understanding of authentic experience could have future benefits in the mental health arena.

A major question in authenticity research is: What causes feelings of authenticity? (Lenton et al., 2011). One of the main hypotheses is that we feel authentic when we behave in line with our personal traits (Schlegel et al., 2009). Although intuitive sounding, some preliminary experimental work suggests this is not the case, leading to speculation that it is, instead, the content of our behaviour that is relevant (Fleeson & Wilt, 2010). In this study, I investigated these contrasting propositions further. Additionally, Fleeson and Wilt (2010) questioned whether reports of authenticity are affected by *when* people are asked to report. Given the important methodological implications, I also compared "in-the-moment" versus retrospective reports of state authenticity.

Introduction

Before discussing the present study further, I shall give a brief introduction to authenticity and outline why a focus on state authenticity is warranted. This is followed by an analysis of the two competing hypotheses of causes of state authenticity, along with discussion of the behavioural content that might have an effect. In particular, the possible relevance of behaviour that expresses values is considered, with a focus on "helping" as an expression of the value "benevolence". Finally, I will look in greater detail at timing of reports of authenticity and differences that emerge from reports gathered at different times.

Authenticity

Most descriptions of authenticity emphasise the extent to which an individual's feelings, thoughts and behaviour reflect their true self (Kernis & Goldman, 2006). Although in the past the true self, or real self, was often considered in moral terms (Kernis & Goldman, 2006), Schlegel (2009) recently defined the true self as a cognitive schema representing those aspects of self considered by the person as most emblematic of their true nature. Authenticity is typically considered as distinct from the true self, it is instead, the *expression* of the true self, or the feeling of acting in accord with the true self (Schlegel et al., 2009; Schlegel, Hicks, King, & Arndt, 2011).

Given the moral conceptions of authenticity in the past, it would be natural to assume that doing or being "good" will feel authentic. However, such assumptions should not be taken for granted, as studies indicate people have a more complex understanding (Johnson & Boyd, 1995; Schlegel et al., 2009). For example, adjectives chosen to describe an individual's true self were significantly less socially desirable than those for the actual self (Schlegel et al., 2009). We appear to recognise, and admit to, negative as well as positive aspects in our true self (Bargh, McKenna, & Fitzsimons, 2002; Johnson & Boyd, 1995; Joinson, 2001).

Authenticity has also been conceptualised as consisting of a number of different aspects (Kernis & Goldman, 2005; Wood et al., 2008). The Wood et al. (2008) model is based on a person-centred conceptualisation in three parts. First, authentic living, behaving in accordance with one's beliefs and values, and, second, self-alienation, the discrepancy felt between one's true experience and one's

conscious awareness of self. By increasing conscious awareness of emotions, cognitions and physiological states, the discrepancy from the true self can be reduced, resulting in a decrease in self-alienation. Finally, accepting external influence is the extent to which one conforms to others' expectations.

State Authenticity

Prior experimental work has focused on authenticity as a trait (Lenton et al., 2011). Whilst this is essential and valuable, Heller, Komar and Lee (2007) argued that investigations of states across situations and times are an essential counterpart to the study of traits. Although traits and states are closely intertwined, it should not be assumed they have the same nature and structure (Heller et al., 2007). For example, recent work (Lenton et al., 2011) demonstrated that an individual's situational experience of authenticity was separable from their dispositional authenticity. Therefore, investigations of authenticity, as a state, are important in their own right.

Trait-Consistency Versus State-Content Significance

A major question in relation to state authenticity is: What is it that leads to a feeling of authenticity? (Fleeson & Wilt, 2010; Lenton et al., 2011). Fleeson and Wilt (2010) proposed two major competing hypotheses. The "trait-consistency" hypothesis proposed that individuals will feel most authentic when behaving in ways consistent with their traits. Alternatively, the "state-content significance" hypothesis proposed that some ways of acting will feel more authentic due to the content of behaviour, regardless of the individual's traits.

The trait-consistency hypothesis is rooted in descriptions of authenticity that place an emphasis on behaviour that is consistent across many different contexts (Schlegel et al., 2009). This approach is similar to personality theorists' understanding of traits as "transcontextual" (McCrae & Costa, 1984, p. 175), that is, unchanging across different times and situations.

There is some empirical support for trait-consistency: Those who reported high levels of consistency across a variety of different life roles, such as employee and friend, felt greater authenticity in those roles (Sheldon, Ryan, Rawsthorne, & Ilardi, 1997). Acting in accordance with one's character is considered a basic value (Ryan

& Deci, 2004), whereas changing your behaviour simply to "fit in" is believed to be harmful to one's well-being and relationships (Kernis & Goldman, 2005).

There is a strong intuitive appeal in definitions of authenticity that include behavioural consistency with traits. When asked "when will introverts feel most authentic?" nearly 90% of respondents believed it is when they are "acting introverted", rather than "acting extraverted" (Fleeson & Wilt, 2010).

The alternative, state-content significance hypothesis, is based on the theories of humanistic psychologists such as Carl Rogers (1961). From this perspective, it is not consistency that is particularly relevant, instead it is the content and properties of behaviour (Fleeson & Wilt, 2010). Thus the true self, whilst not unrelated to traits or typical behavioural patterns, is distinct from them (Barrett-Lennard, 1998). This means there may be correlations between behavioural content and authenticity that are common across people, regardless of the consistency of that behaviour with their own traits (Fleeson & Wilt, 2010). In this hypothesis, a person who does not have a benevolent lifestyle and doesn't typically display benevolent traits, could feel more authentic when helping a friend. That is, one could feel most authentic when behaving out of character (Fleeson & Wilt, 2010).

In their investigation into judgements of the authentic self, Johnson and Boyd (1995) found supporting evidence for state-content significance. Participants rated a list of dispositional traits for the extent to which each reflected their authentic self (for example, "tendency to be adventurous" or "tendency to be happy") and separately rated the extent the contents, thoughts and feelings of experiences reflected their authentic self (for example, "things you do for adventure" or "your feelings when happy"). Participants rated the contents of their experiences, rather than their traits, as better indicators of their authentic selves, thus indicating that contents of experiences are most relevant for recognising or understanding one's true self.

As an additional task, participants rated each of their dispositional traits for how much it differed from other people. The traits that people believed were most likely to distinguish them from other people were largely independent of the traits they believed were most reflective of their authentic self. Participants also rated how

Introduction

different they thought the content of their experiences were from other people's. It was discovered that "feelings when happy" or "feelings when loving", whilst ranked as similar to other people's, were still classified as relatively important indicators of the authentic self. Therefore, as suggested by the state-content significance hypothesis, the authentic self, to some degree at least, could reflect feelings and experiences that are core to the human experience and shared by everyone regardless of their traits.

More recently, Fleeson and Wilt (2010) conducted a series of studies aimed at directly testing these two different understandings of the subjective experience of authenticity. Participants reported feeling closer to their authentic self when they were involved in activities in which they reported their behaviour as extraverted, agreeable, conscientious, intellectual or emotionally stable, regardless of their own underlying personality traits. For example, introverts reported feeling most authentic when behaving extraverted rather than introverted. The possibility of a "feel good" effect was ruled out by statistically controlling for participants' mood (positive affect and negative affect) at the time of each report. Therefore, Fleeson and Wilt found good supporting evidence for the state-content significance of behaviour: Individuals experienced greater closeness to their authentic self as result of their behavioural content as opposed to their behavioural consistency with traits.

Such findings can seem counter-intuitive, but this may partly be due to the way we typically conceptualise personality traits. McCrae and Costa (1984; 1994) have written of the very high stability and predictive power of personality traits. Their work has led to them to believe that individuals are characterised by their traits (McCrae & Costa, 1994) and from there it is easy to conclude that these same traits are, as they say, "our very selves" (p. 175). However, empirical data from studies of our day-to-day behaviour presents a different story. Perhaps surprisingly, most of the time people acted out of character with their traits (Fleeson, 2001; Mischel, 1968) and traits varied more within an individual, than between individuals (Heller et al., 2007).

In their studies of individuals' trait variations across different roles, Sheldon et al. (1997) found that, indeed, people are stable and consistent in their dispositions.

Introduction

However, they also identified what they considered to be meaningful variation across roles. They concluded that situations vary in the support they offer for authentic self-expression.

Fleeson and Wilt (2010) interpreted their results as suggesting that specific behavioural content led to increases in felt authenticity. However, the observational nature of their studies cannot rule out the alternative interpretation, that the direction of causality ran in the opposite direction: feeling authentic led to the expression of these behaviours. Sheldon et al. (1997) have considered this interpretation of their similar study's findings, suggesting that if we were all able to feel more authentic, we would also then feel more extraverted, agreeable, conscientious, intellectual and emotionally stable.

Behaviour with State-Content Significance

If the content of behaviour affects state authenticity, what are the characteristics of this behaviour? Authenticity-inducing behaviours are likely to feel more natural and unrestricted, with the sensation that they are internally generated and autonomous (Lynch & Ryan, 2004; Sheldon et al., 1997). For humanistic psychologists it was specifically behaviours encouraging personal growth that increased authenticity (A. H. Maslow, 1968; Rogers, 1961). Therefore, Fleeson and Wilt (2010) speculated that expressing values would lead to increased authenticity. Expression of values is recognised as fundamental to personal growth (Bauer & McAdams, 2004; Bergin, 1980; Sheldon & Kasser, 2001). Thus, situations that are supportive of freely expressed values would be associated with higher state authenticity.

Fleeson and Wilt (2010) pointed out that the personality states, such as extraversion and intellect, they found associated with authenticity have been described as growth-oriented (Saucier, 1994). Sheldon et al. (1997) recognised that the Big Five (McCrae & John, 1992) personality states, which they also found associated with authenticity, were all characteristics that have been considered to convey unique, adaptive functionality (Buss, 1991). Likewise, values have been proposed to reflect adaptive functions (Schwartz & Bardi, 2001). Therefore, there

may be a collection of related behaviours, recognised and felt as growth-orientated, that for adaptive purposes arouse feelings of state authenticity.

Values

Individuals' values serve as guiding principles for their lives (Hitlin, 2003) they are considered "deeply personal" (p.119) and key to understanding "personal identity" (p. 119). However, values are different from attitudes, primarily in their abstract generality (Schwartz, 1992) and universal recognition (Schwartz, 1992; Schwartz & Boehnke, 2004). For example, Kerlinger (1984) found in the United States that liberals and conservatives, typically politically opposed, did not consider the other group's values as negative.

Schwartz (1992) proposed a universal and comprehensive set of 10 value-types. The value-types are considered to be motivational constructs, acting as goals for our behaviour (Verplanken & Holland, 2002). For example, being helpful would fulfil the goal of the value-type benevolence. The pan-cultural agreement on value-types is thought to be due to their adaptive importance in meeting basic requirements for successful societies (Schwartz & Bardi, 2001). Although individuals and groups can have striking differences in their own value priorities, a consistent overarching hierarchy has emerged from across nations and cultures (Schwartz & Bardi, 2001). There are three main levels within the hierarchy and each level is believed to reflect its adaptive importance in meeting the needs of society. For example, the top-ranked value-types of benevolence, self-direction and universalism meet the most important evolutionary needs for cooperation and supportive primary relationships (Schwartz & Bardi, 2001).

The suggestion that the autonomous expression of values could be core to understanding state authenticity appears well grounded theoretically. Values are seen as intrinsic to the definition of authenticity and described as the "anchors" (Hitlin, 2007, p. 249) of authentic experiences. Not only that, but there appear to be strong evolutionary reasons for value-expression to feel authentic. Although there are good theoretical imperatives for a role for values in state authenticity, until now, it appears there has not yet been any direct empirical testing of the idea.

Values: Trait-Consistency Versus State-Content Significance

Whilst the expression of values may well lead to increases in state authenticity, it is possible that which particular values affect authenticity may vary from individual to individual. Although there is a commonly held value-hierarchy, individuals vary in their own personal rankings of values (Schwartz & Bardi, 2001). Values, are also heterarchical and, thus, only make sense in relation to other values in terms of the potential harmonies, conflicts and trade-offs between them (Hitlin, 2007). Hitlin (2007) suggested that people feel authentic when verifying identities that support *important* personal values.

Therefore, given the personal nature of values, it is possible that there may be a need for value-consistency, an equivalent of the trait-consistency proposed for personality traits. Values can be central or peripheral to the self (Schwartz & Boehnke, 2004), and so, only if a particular value is felt central to identity might there be an effect on authenticity. From this value-consistency point of view an altruistic person would feel authentic when behaving in a helpful way, but a non-altruistic person would not.

Alternatively, although individuals privilege particular values, given the universality of value-types and human moral orientations (Smith, 2003) it is possible that the expression of values per se, rather than an individual's preferred values, leads to a feeling of authenticity. Given the mounting evidence for the relevance of behavioural content to state authenticity (Fleeson & Wilt, 2010; Johnson & Boyd, 1995; Sheldon et al., 1997), there is good support for a state-content significance approach to the expression of values. From this perspective, for example, even an individual who does not consider benevolence as important would still feel increased authenticity when helping someone.

Helping

From a state-content significance approach, it is unclear whether behaviour expressing each value-type would lead to authenticity. Perhaps, only a subset of values has relevance for authenticity, if so, the most likely value-type candidates would be those consistently ranked as most important: benevolence, self-direction and universalism. Of these three values, benevolence is typically ranked top

(Schwartz & Bardi, 2001). Given the ranked importance of benevolence in the hierarchy of values, it is a good starting point for testing whether expression of values is associated with authenticity,

Benevolence means preserving and enhancing the welfare of others (Schwartz & Boehnke, 2004) and a prototypical benevolent behaviour is helping others (Bardi & Schwartz, 2003). Helping others is thought to have its own "rewards", in that the helper will feel better in some way as a result of helping. For example, autonomous helping was associated with greater subjective well-being, vitality and self-esteem (Weinstein & Ryan, 2010). It is likely that the rewards of helping are related to the important adaptive functions that Schwartz (2001) proposed for values, with the rewards acting as incentives for behaviours that will confer evolutionary benefits. A feeling of authenticity could well act as one of these rewards, since authenticity has been correlated with positive affect (Schlegel et al., 2009) and individuals have reported they are highly motivated to experience authenticity (Lenton et al., 2011).

In-the-Mment Versus Retrospective Reports

In their studies of associations between personality state behaviours and state authenticity, Fleeson and Wilt (2010) initially only found evidence for the state-content significance hypothesis, that is, behavioural content, rather than personal traits, affected participants' state authenticity. The evidence was gathered from participants' reports of authenticity *in-the-moment* of enacting the behaviours.

However, Fleeson and Wilt (2010) found a different pattern of results when they asked participants about their authenticity retrospectively. In the retrospective study, participants were asked to rate a list of personality adjectives for how well each adjective described them (actual self). Then, the task was repeated, but this time the participants were asked to rate how well each adjective described their true self. Unlike their previous studies, there was support for the trait-consistency hypothesis. Evidence came from the significant correlations found between how well adjectives described an individual's actual self and true self. For example, if adjectives for extraverted traits were rated highly descriptive of an individual's actual self they were also rated highly descriptive of their true self. Thus a person's true self was consistent with their personal traits. There was also simultaneous support for the

state-content significance hypothesis which predicted differences in descriptions of the actual and true self. In particular, adjectives of the traits extraversion, intellect and emotional stability were rated significantly more descriptive of the true self than the actual self.

Fleeson and Wilt (2010) argued that the retrospective study assessed *beliefs* about state authenticity rather than the actual experience. They speculated that this difference accounted for the emergence of the trait-consistency hypothesis, for which there was previously no evidence in their experiential sampling studies. Consequently, they suggested the true self is revealed at the time of the authentic experience, whereas memory biases obscure the true self in retrospective reports.

Fleeson and Wilt's suppositions raise issues for investigations of authenticity. If participants' perceptions and reports of authenticity change over time, then it is important to understand such changes. At present, without a greater body of data available, it is difficult to interpret the relationship between "in-the-moment" and retrospective reports of authenticity. Therefore the current study compared each type of reporting.

The Present Study

The present study aimed to address gaps in the field, by focusing on state authenticity in its own right. First, I extended previous work comparing the "trait-consistency" and "state-content significance" hypotheses. In particular, I tested the suggestion that behaviour expressing values, specifically helping others, leads to increases in authenticity. Secondly, I compared an "in-the-moment" report of state authenticity with a retrospective report recalling the reported authenticity.

The study required large numbers of participants to answer questions on three separate occasions. Therefore, to maximise participation and reduce attrition, the procedure needed to be simple and convenient. Thus, a web-based survey method was employed, adapted from similar studies (Grant & Gino, 2010; Weinstein & Ryan, 2010). At time-point 1, participants reported on their values and traits. At time-point 2, participants were assigned either to a helping condition, in which they were offered the opportunity to help an unknown participant, or to a non-helping

(control) condition. Immediately thereafter, and then approximately 2 weeks later, participants were asked to rate their level of authenticity (at time-point 2).

Based on previous theorising and the empirical work outlined above the following main hypotheses were made:

Hypothesis 1: "Trait-consistency" versus "state-content significance": the content of behaviour, rather than consistency with personal traits, will affect state authenticity. Specifically, helping others will lead to increases in state authenticity, regardless of underlying helpfulness-traits.

Hypothesis 2: "In-the-moment" versus retrospective reports of authenticity will differ. Specifically, in-the-moment reports will only show evidence of state-content significance, whereas retrospective reports will have some evidence of trait-consistency.

Introduction

Pilot Study

Overview

The pilot study manipulated helping behaviour in a web-based survey. The aim was to test whether the proposed method for the main study would be effective. Accordingly, a small sample of participants was randomly assigned to a helping or non-helping condition. Helping was operationally defined as choosing to help an unknown participant by answering a number of creative word puzzles on their behalf to enable the unknown participant to enter a prize raffle.

Method

Participants

Participants were 39 postgraduate students (23 women, 13 men, 3 unreported) from a range of courses at the Universities of Edinburgh and Stirling, with ages ranging from 22 to 49 years (M = 27.0, SD = 5.43, with 3 unreported). Of these, 72% were ethnically white and 21% were non-white (8% unreported). Only 23% reported a non-English native language and of these all reported their command of English as "fair" (the mid-point on the scale). Recruitment was via email with an invitation to take part in an online study investigating creativity and other personality traits. No incentives were given for participation.

A total of 43 participants initiated the web-based survey. However, four participants terminated the survey before the word puzzle questions so were excluded from the study. A one-tailed Fisher's exact test showed that the withdrawal rate was not significantly higher in the helping condition (13%) than the non-helping condition (5%), p = .36. Therefore, it seems unlikely that participants who chose to continue with the helping task were naturally more helpful than the non-helpers.

Some participants skipped a critical item or one or two items from a scale and, thus, these participants were excluded from analyses involving that item or scale (hence, degrees of freedom vary somewhat across tests).

Materials and Procedure

Participants could link to the online survey from the recruitment email and so complete the study at a time and place of their own choosing. All questions were

voluntary and participants could leave the survey at any point. Appendix A provides the complete set of pilot survey materials.

International Personality Item Pool (IPIP) creativity. This is the 10-item Creativity scale drawn from the IPIP (Goldberg et al., 2006) designed to measure the preference for innovation and experiment, for example: "I am full of ideas". Participants rated items on a scale of 1 (strongly disagree) to 7 (strongly agree). In the current survey the Cronbach's alpha = .86.

Insight. The original insight scale from the IPIP (Goldberg et al., 2006) is composed of 10 items, 2 of which overlap with those of the IPIP creativity scale. I selected the three remaining positively worded items, for example: "I put a new perspective on things" (1 = strongly disagree, 7 = strongly agree). In the current survey the Cronbach's alpha = .86.

The insight measure questions were interleaved with the questions from the IPIP creativity measure.

Manipulation. There were two versions of the survey and participants were randomly assigned to either version. The first version was only for those in the helping condition and included an extra screen of instructions immediately after the insight measure. The instructions informed the helping participants that they could help an unknown by participant by answering some word puzzle questions. In particular, they were advised that by answering the questions they would help the unknown participant become eligible to enter a raffle for a prize of £50 worth of Amazon vouchers. For each puzzle question answered the unknown participant would be given a raffle ticket. Full instructions are shown in Appendix A. These instructions were followed by the word puzzle questions. The survey presented to the non-helping group was identical except they were not shown the extra instructions described above and moved directly to the word puzzle questions after the insight measure.

Creative word puzzles. Participants were asked to answer 18 creative word puzzle questions grouped in 2 blocks of 9. Questions were based on Remote Association Test (RAT) questions (Bowden & Jung-Beeman, 2003) originally developed by Mednick (1962) to measure creative thought without requiring

knowledge specific to any field. Participants were shown a group of three unrelated words (e.g., light, birthday, stick) and asked to think of a fourth word that could be related to all three words (e.g., candle).

Typically in the RAT participants must work out the answer words themselves, however, to reduce any performance-related stress, the list of possible answers for each block of questions was provided in a drop-down menu; participants selected one answer from the list. To minimise performance-related stress, the least difficult RAT questions were used (Bowden & Jung-Beeman, 2003). Questions using American-English were excluded.

After the word puzzles, participants completed the following measures in the order shown below. Although, only participants in the helping condition completed the two measures falling immediately before the general helpfulness measure: helpfulness to unknown participant and motivation to help unknown participant.

Puzzle difficulty. Participants rated the overall difficulty of the word puzzles (1 = very easy, 7 = very difficult).

Helpfulness to unknown participant. Only participants in the helping condition were asked to rate how helpful they had been to the unknown participant (1 = not at all, 5 = extremely).

Motivation to help unknown participant. Weinstein and Ryan (2010) have highlighted the role that motivations for helping play in the accrual of psychological benefits gained by helpers. In particular, those who feel their motivation for helping is autonomous versus controlled show greater well-being. Given authenticity's close links with autonomy (Ryan & Deci, 2000) it is possible that the importance of autonomous motivation in helping also applies to any effects on felt authenticity.

Therefore, two items from the Motivation to Help Scale (Weinstein & Ryan, 2010) were used to assess the extent to which participants in the helping condition felt controlled in their helping of the unknown participant (e.g., "because I felt I should") and two items to assess autonomous helping (e.g., "because I valued doing so"). To provide an overall index of the degree of autonomous motivation for helping, I subtracted controlled motivation from autonomous motivation as done in previous studies (Black & Deci, 2000; Weinstein & Ryan, 2010).

General helpfulness. Participants were asked to rate how helpful they are to other people in general (1 = not at all, 7 = extremely).

Motivation to help generally. Four items from the Motivation to Help Scale were used to assess participants' usual reasons for helping in general. The same 4 items were chosen as for the "motivation to help the unknown participant" measure but re-worded to apply to the more general case (e.g., "because I feel I should" and "because I value doing so"). To provide an overall index of the degree of autonomous motivation for helping generally, I subtracted controlled motivation from autonomous motivation.

Mood. For brevity, mood was measured with one positive affect (PA) item and one negative affect (NA) item. Participants were asked to rate "how you feel right now" for "positive mood (attentive, interested, alert, excited, enthusiastic, inspired, proud, determined, strong, active)" and "negative mood (distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, afraid)" (1 = not at all, 7 = extremely). I took these descriptors from the Positive and Negative Affect Schedule (PANAS: Watson, Bryan, & Thrash, 2010). The PA and NA items were strongly negatively correlated (r = -.70). Thus, to provide an overall index for mood, NA scores were subtracted from PA scores.

State self-esteem. To assess state self-esteem, I adapted two items from the 10-item (trait) Rosenberg Self-Esteem Scale (Rosenberg, 1965). Weinstein and Ryan (2010) argued that these two items broadly and explicitly represent self-esteem. The item wording was altered to make state versions of items ("I am a person of worth" and "I feel satisfied with myself") and were rated by participants (1 = not at all, 7 = extremely). Weinstein and Ryan found a strong correlation between the two items (r = .79), as did I (r = .68). Thus, I averaged them to form a measure of state self-esteem.

Real self circles. This was the first method used to measure state authenticity and is a visual-aid image (Figure 1) for participants to rate how close they feel to their real self. The image design was adapted (Lenton, 2009) from a similar image (Moss, 2005) used in the Inclusion of Other in the Self Scale (Aron, Aron, &

Smollan, 1992) in which overlapping circles were used to convey a measure of interpersonal closeness. Participants were given the following instructions:

> In each pair of circles below, the circle on the left represents who you feel yourself to be RIGHT NOW and the circle on the right represents your REAL SELF. Your REAL SELF is who you truly are (which may not necessarily be the same as who you would like to be).

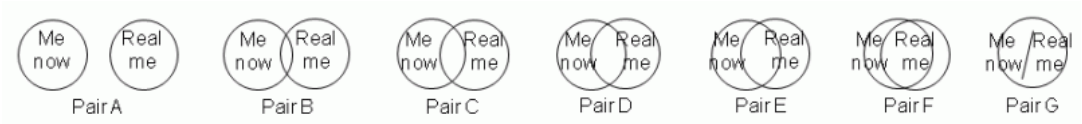


Figure 1. Real self circles image.

For the purposes of data analysis, each pair of circles was converted to a consecutive number from 1 to 7; with Pair A becoming 1 and Pair G becoming 7; therefore, the higher the number the greater the feeling of authenticity.

State version of the Wood authenticity scale. The second measure of state authenticity was a modified version of the 12-item Wood authenticity (trait) scale (Wood et al., 2008). This scale measures a tripartite conception of authenticity, comprising: authentic living (e.g., "I live in accordance with my values and beliefs"), self-alienation (e.g., "I don't know how I really feel inside") and accepting external influence (e.g., "Other people influence me greatly"). Participants rated items on a scale of 1 (strongly disagree) to 7 (strongly agree).

Although the Wood scale was designed as a *trait* measure (Wood et al., 2008), the wording was changed to convert this to a *state* measure of authenticity. Each item statement was prepended with the phrase "right now" and the tense and grammar changed appropriately, for example: "other people influence me greatly" was changed to "right now I'm feeling greatly influenced by other people". In the current study the subscales for self-alienation and accepting external influence were reversed and re-named "self-attunement" and "rejecting external influence" to allow all subscales to be referred to in the positive direction, that is, the higher the value the greater the authenticity.

Ideal self circles and ought self circles. These measures were used to assess state feelings about the ideal self, that is, "who you would ideally most like to be" and the ought self, that is, "who you feel required to be as a result of duties and obligations". Participants were shown the images displayed in Figure 2 and Figure 3 (Lenton, 2009) and were asked to choose the pair of circles that best represented their current state. As with the real self circles measure each pair of circles was converted to a consecutive number from 1 to 7.

Figure 2. Ideal self circles image.

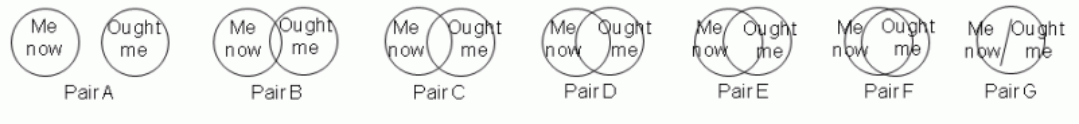


Figure 3. Ought self circles image.

Results and Discussion

Manipulation Check

Perceived helpfulness. All helpers rated their helpfulness to the unknown participant as equal to, or greater than, the scale mid-point of "moderately" helpful, with 60% rating themselves as "extremely" helpful (5, on the 1-5 scale). A one-sample t-test found that the helpers' mean rating of their helpfulness to the unknown participant ($N = 20$, $M = 4.50$, $SD = 0.69$) was significantly higher than 4 ("very" helpful), $t(19) = 3.249$, $p < .004$, $d = 0.72$. A paired-samples t-test found there was also a non-significant trend for helpfulness to the unknown participant to be higher than helpers' ratings of their general helpfulness ($M = 4.20$, $SD = .77$, $t(19) = 1.552$, $p = .137$), but an independent-samples t-test found helpfulness to the unknown participant was significantly higher than the *non-helpers'* ratings of general helpfulness ($N = 19$, $M = 3.74$, $SD = 0.87$, $t(37) = 3.042$, $p = .004$, $d = 0.97$); see

Figure 4. Overall, these results indicate the helpers felt they were particularly helpful to the unknown participant.

An independent-samples t-test found the helpers' and non-helpers' ratings of *general* helpfulness did not differ significantly, $t(37) = 1.763$, $p = .086$, $d = 0.56$, However, the marginal significance and medium effect size suggest the manipulation resulted in some increase in the helpers' general helpfulness. This marginally significant increase goes some way to explaining why the helpers' helpfulness towards the unknown participant was not significantly higher than their general helpfulness. Both measures of helpers' helpfulness were increased to some extent by the manipulation, although the difference between the means and effect sizes demonstrate that the increase in the helpers' feelings of helpfulness towards the unknown participant was the greater of the two manipulation effects.

Motivations for helping. Negative values on the index of motivation represent an overall controlled motivation, whereas positive values represent autonomous motivation. A one-sample t-test found the helpers' motivation for helping the unknown participant ($N = 20$, $M = 0.65$, $SD = 0.99$) was significantly higher than the index mid-point of 0, $t(19) = 2.942$, $p = .008$, $d = 0.66$, indicating that, on average, their motivation for helping was relatively autonomous. A paired-samples t-test found the helpers' motivation for helping the unknown participant was not significantly different from their motivations for helping in general ($M = 0.95$, $SD = 0.61$, $t(19) = 1.453$, $p = .163$, $d = 0.36$) and an independent-samples t-test found the helper's motivation for helping the unknown participant was also not significantly different from the *non-helpers'* general motivations ($N = 19$, $M = 0.84$, $SD = 0.60$), $t(32) = 0.737$, $p = .466$, $d = 0.23$. Likewise, there was no significant difference between helpers' and non-helpers' motivations for helping in general, $t(37) = 0.311$, $p = .580$, $d = 0.18$

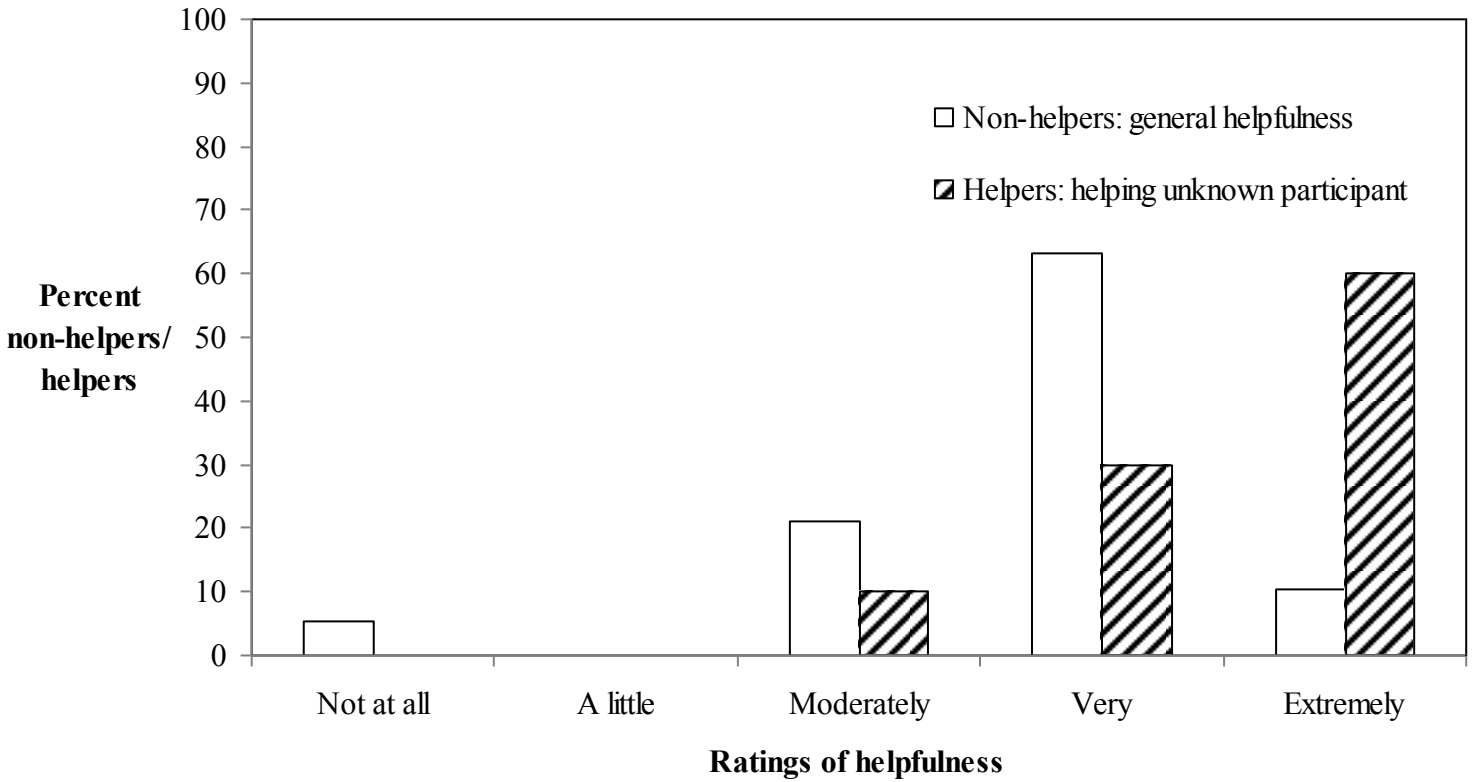


Figure 4. Distribution of ratings of non-helpers' general helpfulness and helpers' helpfulness towards unknown participant.

Pilot Study

Overall then, the helpers did not perceive the manipulation as mandating, or controlling, their behaviour; instead, any helping behaviour was perceived as stemming from their own volition.

Possible Effects of Helping

Mood and self-esteem. As the high standard deviation measures indicate, mood varied considerably across both non-helpers ($N = 18$, $M = 1.28$, $SD = 2.14$) and helpers ($N = 17$, $M = 1.65$, $SD = 1.46$) but there was no significant difference between the means of the mood measure (independent-samples t test, $t(30.09) = 0.600$, $p = .553$, $d = 0.20$). There was also no significant difference between the conditions for ratings of self-esteem (non-helpers, $M = 3.64$, $SD = 0.72$; helpers, $M = 3.76$, $SD = 0.73$; independent-samples t-test, $t(33) = 0.511$, $p = .612$, $d = 0.17$). It appears that helping did not affect the helpers' mood or self-esteem.

Word puzzle difficulty and performance. Overall, participants found the word puzzles relatively easy, with no significant difference between non-helpers' ($N = 19$, $M = 2.11$, $SD = 1.05$) and helpers' ($N = 20$, $M = 1.85$, $SD = 0.88$) ratings of puzzle difficulty (independent-samples t-test, $t(37) = 0.827$, $p = .413$, $d = 0.27$). Participants generally performed well with 64% answering all puzzles correctly.

Twenty-one percent of participants answered "don't know" to one or more puzzle questions, but a two-tailed Fisher's exact test found no significant difference between the proportions of non-helpers (16%) and helpers (25%), giving this response, $p = .695$. Likewise, there was no significant difference between proportions of non-helpers (32%) and helpers (25%) who answered one or more puzzles incorrectly, X^2 (1, $N = 39$) = 0.208, $p = .648$. The proportion who answered "don't know" and/or gave an incorrect answer did not significantly differ between non-helpers (37%) and helpers (35%), X^2 (1, $N = 39$) = 0.208, $p = .648$.

Overall, non-helpers and helpers had similar levels of performance, implying the manipulation did not create differences in how they approached the puzzles. Therefore, it appears the methodology specifically tested the effects of the act of helping, rather than the detail of *how* the helping task was performed.

State authenticity. As Table 1 shows, the helpers and non-helpers did not differ with respect to state authenticity for any of the measures, so it appears the

helping manipulation did not have any significant effect on the helpers' perception of their state authenticity. Although non-significant, the differences in means were not in the expected direction; helpers showed lower authenticity than non-helpers. However, effect sizes are relatively small so the results may plausibly be due to the small sample sizes. Alternatively, the results may reflect the nature of the experience of authenticity.

Summary

The manipulation had the desired effect: Participants in the helping condition reported feeling significantly helpful. This effect did not generalise, however, to self-perceived overall helpfulness. Participants in the helping condition reported their motivations for helping were autonomous; an important consideration when investigating authenticity. Performance on the puzzle questions was not significantly different between the two conditions, indicating that any later effect of the manipulation would likely not be due to differences in how the puzzles task was carried out. These results endorse the use of the methodology for the main study.

Table 1

Differences Between Non-helper's and Helpers' Ratings of Authenticity

	Non-helpers		Helpers					
Scale/subscale	*M*	*SD*	*M*	*SD*	*df*	*t*	*p*	Cohen's *d*
Real self circles	5.17	1.72	4.61	1.72	34	0.970	.340	0.33
State Wood authenticity	60.94	9.04	57.76	10.85	31	0.909	.370	0.32
Authentic living	22.22	4.62	21.50	3.70	34	0.518	.608	0.17
Self-Attunement	20.63	5.01	19.50	5.35	32	0.631	.533	0.22
Rejecting external influence	17.33	5.34	16.82	4.59	33	0.302	.764	0.10

Note. State Wood Authenticity = state version of the Wood authenticity scale.

Main Study

Overview

The main study tested the effects of helping on state and recalled authenticity via a three-part web-based survey.

Method

Participants

There were 238 participants; 123 assigned to the non-helping condition and 115 to the helping condition. The participants comprised 181 women and 56 men (1 unreported) with ages ranging from 18 to 78 years (M = 40.5, SD = 15.55, 2 unreported). Of these, 91.2% were ethnically white and 7.6% non-white (1.3% unreported). Only 13.4% reported a non-English native language and of these all reported their command of English as at least "fair" (the mid-point on the scale).

Recruitment was via a range of methods and to encourage participation those who completed all parts of the survey were entitled to enter a raffle with a prize of £100 worth of Amazon vouchers. The survey was publicised as investigating "creativity and other personality traits". Emails advertising the study were sent to a list of volunteer participants maintained by University of Edinburgh and to postgraduate students in the School of Philosophy, Psychology and Language Sciences. The study was also listed on a number of web-sites that encourage participation in psychology-related experiments.

Initially 333 participants took part in the study but a number of exclusions were required. Sixty eight participants completed only Part 1 of the survey so were excluded. These participants were significantly younger, with significantly higher levels of non-white ethnicity. The source of these differences is likely to have come from the different recruitment methods. Those recruited from the volunteer list maintained by the University of Edinburgh were likely to have greater commitment to completing the study than those recruited via web sites, but were also typically older and ethnically white. However, participants who only completed Part 1 were not significantly different for: sex, levels of native English speakers or command of English. Therefore it seems unlikely that the exclusion of Part 1 only participants

would have biased the study results in any way pertinent to the traits under investigation.

A further 21 participants indicated in their responses to the open-ended manipulation reminder question they were suspicious of the existence of the unknown participant they could help and so were excluded. Two participants used a different email address in Part 2 of the survey; this prevented matching them with their Part 1 results and so they were excluded. Eighteen participants reported their command of English as only "poor to fair" or "fair"; so their responses were examined more closely. Any of these participants who skipped a word puzzle question or answered "don't know" or incorrectly were excluded from the study. Likewise, any whose responses to the open-ended manipulation reminder question indicated a lack of understanding of the study were also excluded. This led to the exclusion of three participants. Due to concerns she had not treated the survey seriously, 1 additional participant was excluded for skipping 10 of the word puzzles (note: no other participant skipped more than 2 puzzles).

A few participants encountered technical difficulties viewing the circle measure images. These participants were excluded from any analyses dealing with survey questions from that point onwards.

Materials and Procedure

Participants could link to the survey from an email message sent to them in advance and so could complete the study at times and places of their own choosing. All questions were voluntary and participants could leave the survey at any point. Participants were asked for their email address which was used to contact them about each part of the survey and to match responses from the separate parts as being from the same participant. Appendix B provides the complete set of main survey materials

Part 1

Part 1 gathered information about participants' traits to allow testing of potential moderation by these traits. Participants completed the Schwartz values measure followed by interleaved questions from the authenticity, communal orientation and altruism trait measures. Trait measures were followed by the creativity scale for different domains measure and finally the demographic questions.

Schwartz value. The Schwartz's Value Survey (SVS) measures human values across 10 basic motivational types: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security (Schwartz, 1992). The original 57-item survey is long and so Lindeman and Verkasalo (2005) developed the 10-item Short SVS (SSVS), which I used in the current study. Participants were asked for each of the 10 values to "rate its importance as a life-guiding principle for YOUR life" and were presented with the name of the value together with the descriptors of the related item from the original longer survey, for example, "power - social power, authority, wealth" (-1 = against my principles, 5 = of supreme importance).

Schwartz (1992) proposed the value-types form groupings of values that are compatible or incompatible. One compatible grouping is self-transcendence (universalism and benevolence), which measures the motivation of people to transcend selfish concerns and promote others' welfare. In the current study, universalism and benevolence were correlated (r = .43), and a self-transcendence subscale was created from the mean of these two value-types.

Trait authenticity. This was assessed using version 3 of the 45-item Authenticity Index (AI) (Goldman & Kernis, 2004 as cited in Kernis & Goldman, 2006, p. 303). The AI was designed to assess the expression of one's authentic self without defensive distortions. It measures four aspects of authenticity: accurate awareness (e.g., "for better or for worse I am aware of who I truly am"); authentic behaviour (e.g., "I find that my behaviour typically expresses my values"); relational orientation (e.g., "I want people with whom I am close to understand my weaknesses") and unbiased processing (e.g., "I find it very difficult to critically assess myself" (reversed)). Participants rated items on a scale of 1 (strongly disagree) to 7 (strongly agree). In the current study overall Cronbach's α = .90 and for each subscale: accurate awareness = .82; authentic behaviour = .77; relational orientation = .73 and unbiased processing = .77.

Trait communal orientation. This was assessed using the Communal Orientation Scale (Clark, Oullette, Powell, & Milberg, 1987). The scale was designed to assess whether participants typically behave in a communal fashion

towards others as well as whether the participant expects others to behave in a communal fashion towards them. For the current study only 10 of the 14 items were used; specifically those items concerned with behaviour towards others, for example, "I often go out of my way to help another person" (1 = strongly disagree, 7 = strongly agree). In the current study Cronbach's α = .82.

Trait altruism. This was assessed with the 10-item Altruism scale drawn from the IPIP (Goldberg et al., 2006), measuring active concern for others, for example: "I love to help others" (1 = strongly disagree, 7 = strongly agree). In the current study Cronbach's α = .78.

Creativity scale for different domains. This 10-item scale (Kaufman & Baer, 2004) measured self-assessments of creativity within different domains, for example, "how creative are you in the area of art". Participants were asked to rate their creativity in each domain (1 = not at all, 7 = extremely) or could choose "don't know". Items with 'don't know' responses were treated as skipped items when calculating a scale mean (minimum 80% item completion). In the current survey the Cronbach's alpha = .72.

Part 2

Those who completed Part 1 were emailed 1 week later with a hyperlink directing them to Part 2. Part 2 of the survey was very similar to that used in the pilot study; as before, participants were randomly assigned to a helping or non-helping condition, with helpers given the option to help an unknown participant.

In this study; 27 word puzzle questions were included (instead of 18 as in the pilot) with the aim of increasing the sense of helpfulness felt by participants in the helping condition. To minimise the length of the survey the following measures were no longer included: helpfulness to unknown participant; motivation to help unknown participant and motivation to help generally.

Other than the changes described above, Part 2 of the survey followed the same procedure and order of measures as in the pilot study.

IPIP Creativity. As in pilot study.

Insight. As in pilot study.

Manipulation. As in the pilot study, there were two different versions of the survey; one for each condition. Only participants in the helping condition were shown instructions informing them they could help an unknown participant by answering word puzzle questions. By answering the questions they would help the unknown participant become eligible to enter a raffle for a prize of £50 worth of Amazon vouchers. Participants in the non-helping condition moved directly to the word puzzles.

Creative word puzzles. As in the pilot study, although participants were asked to answer 27 creative word puzzles grouped in 3 blocks of 9 puzzles.

Puzzle difficulty. As in pilot study.

General helpfulness. As in pilot study.

Mood. As in pilot study.

State self-esteem. As in pilot study.

Real self circles. As in pilot study.

State version of the Wood authenticity scale. As in pilot study.

Ideal self circles and ought self circles. As in pilot study.

Part 3

Those who completed Part 2 were emailed 2 weeks later with a hyperlink to Part 3. The time delay (M = 16.6 +/- 5.1 days, range = 32 days) between Part 2 and Part 3 allowed investigation of the effect of recall on participants' previously reported feelings of state authenticity. There were 2 versions of Part 3 of the survey. The only difference between the versions was that the survey completed by the helpers included mentions of the unknown participant they helped in Part 2.

All participants completed a manipulation reminder then the following measures, in order: recalled real self circles, recalled state version of the Wood authenticity scale, recalled ideal self circles and recalled ought self circles.

Manipulation reminder. To make salient their different behaviour in Part 2, participants were asked to write what they remembered about completing the word puzzle questions. Participants were shown the following instructions: words in brackets were only shown to participants in the helping condition and the italicised word was only shown to participants in the non-helping condition.

As you'll probably remember, in the last part of the survey you were asked if you would (help Participant X enter a raffle by) answer(ing) some Word Puzzle questions. You were given a group of three words and asked to select a fourth word that linked them all. For example, for the group: light/ birthday/ stick you would have selected the answer 'candle' from the list.

In the box below write a short description of what you were thinking and how you felt when you *were* (helped Participant X by) answering the Word Puzzle questions.

Recalled real self circles. Participants were shown the recalled real self circles image (Lenton, 2009) (Figure 5) and were asked to report how close they had felt to their real self when they were answering the word puzzles in Part 2 of the survey. In each of the recalled measures the instructions for participants in the helping condition included mention of the unknown participant, but otherwise the instructions for the two conditions were the same.

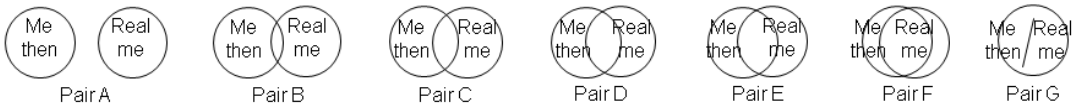


Figure 5. Recalled real self circles image.

Recalled state version of the Wood authenticity scale. Participants were asked to report how close they had felt to their real self when they were answering the word puzzles by completing a recalled version of the Wood authenticity scale. The recalled version used the same statements as the state version in Part 2, but statements were re-worded to refer to items in the past tense, for example “right now I’m feeling greatly influenced by other people” was changed to “I felt greatly influenced by other people”.

Recalled ideal self circles and recalled ought self circles. These measures were used to assess participants’ recall of their ideal self and ought self from Part 2 of the survey. Participants were shown the images (Lenton, 2009) in Figure 6 and

Figure 7 and were asked to report how close they had felt to their ideal self and ought self when they were answering the word puzzles.

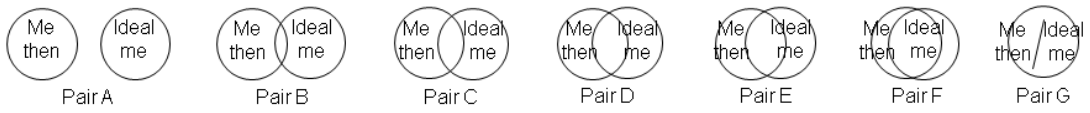


Figure 6. Recalled ideal self circles image.

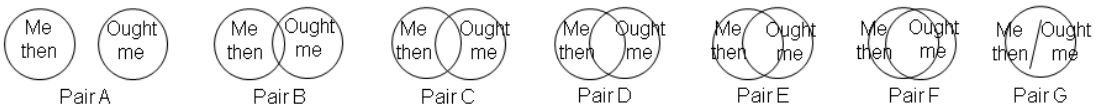


Figure 7. Recalled ought self circles image.

Results

Word Puzzle Difficulty and Performance

Overall participants found the puzzle questions moderately easy and there was no significant difference between the non-helpers' and helpers' ratings of puzzle difficulty (Table 2).

Participants typically performed well, with 70% answering all puzzles correctly. Eleven percent of participants answered "don't know" to one or more questions, but there was no significant difference between the proportions of non-helpers (11%) and helpers (12%) giving this response, X^2 (1, N = 238) = 0.001, p = .973. Likewise, there was no significant difference between proportions of non-helpers (20%) and helpers (23%) who incorrectly answered one or more puzzles, X^2 (1, N = 238) = 0.555, p = .456, or the combined proportion answering "don't know" and/or incorrectly (non-helpers 27%, helpers 30%, X^2 (1, N = 238) = 0.379, p = .538).

Table 2

Differences Between Non-helpers and Helpers for a Selection of Part 2 Survey Variables

	Non-helpers		Helpers					
Variable	*M*	*SD*	*M*	*SD*	*df*	*t*	*p*	Cohen's *d*
Puzzle difficulty	2.47	1.10	2.46	1.01	192	0.020	.984	0.01
Mood PA	4.96	1.09	4.80	1.28	181	0.965	.336	0.14
Mood NA	2.54	1.40	2.42	1.51	188	0.558	.577	0.08
Mood	5.18	1.18	5.19	1.29	189	0.097	.923	0.01
Self-Esteem	5.07	1.00	5.28	1.00	189	1.469	.144	0.21
General helpfulness	5.39	0.89	5.58	0.97	195	1.409	.160	0.20

Overall, there appears to be no significant differences between non-helpers' and helpers' ratings and performances on the puzzle questions. This indicates that, as in the pilot study, any later effects of the manipulation will likely be due to the act of helping, rather than the details of how the helping task was performed.

Mood, Self-Esteem, General Helpfulness

Comparisons of helpers' and non-helpers' ratings of mood, self-esteem and general helpfulness found no significant differences between conditions (Table 2). It appears the helpers' feelings for each of these constructs were unaffected by the helping task.

These results were unexpected as helping would typically be associated with improvements in mood and self-esteem (Ferguson, Singh, & Cunningham-Snell, 1997; Weinstein & Ryan, 2010). This could imply the helping manipulation had no effect. Given this concern, tests on mood, self-esteem and general helpfulness were re-run, but participants who answered less than 70% of the puzzle questions correctly were excluded, since poorer performances may have prevented increases in these measures. These analyses found helpers were significantly higher than non-helpers for self-esteem and marginally so for general helpfulness (Table 3). Thus indicating the helping manipulation was strong enough to produce changes in relevant measures once participants who may not have perceived they were successfully helpful were excluded. However, subsequent independent-samples t-tests of differences between helpers and non-helpers for state authenticity measures did not show significant differences, even when these poorer performing participants were excluded (Appendix D, Tables 1 and 2). Although it is possible authenticity required greater manipulation than the other helping-related states, the significant differences observed in those other states to some extent allayed concerns that the manipulation had no effect.

Table 3

Differences Between Non-helpers and Helpers for a Selection of Part 2 Survey Variables with Participants with Less Than 70% Puzzles Correct Excluded

	Non-helpers		Helpers					
Variable	*M*	*SD*	*M*	*SD*	*df*	*t*	*p*	Cohen's *d*
Puzzle difficulty	2.44	1.08	2.40	0.96	188	0.269	.788	0.04
Mood PA	4.97	1.08	4.90	1.22	186	0.431	.667	0.06
Mood NA	2.56	1.41	2.34	1.48	182	0.996	.320	0.15
Mood	5.17	1.19	5.17	1.38	185	0.031	.975	0.00
Self-Esteem	5.04	0.99	5.35	0.94	181	2.150	.033	0.32
General helpfulness	5.36	0.87	5.62	0.94	189	1.958	.052	0.29

Hypothesis Testing

To test the hypothesis that helping behaviour would influence state authenticity and, further, that this effect may depend on time, I conducted mixed-model ANOVAs for each of the circles measures and the Wood et al. (2008) authenticity scale. These first simple models did not include potential moderators. To test for potential moderation by participants' traits, for the real self circles and Wood authenticity scale, the mixed-model ANOVA was repeated a number of times, each time with a different (standardized) trait entered as both a main effect and as a product term (full interaction model). Finally, to examine the Wood authenticity scale further, mixed-model ANOVAs were run for each individual subscale: authentic living, self-attunement and rejecting external influence.

In each analysis, outliers with studentized residuals greater than an absolute value of 3 were excluded. (Cooks distance and leverage were also calculated but did not identify outliers). Where outliers were deleted, I report the number removed.

Real self circles. Three outliers were removed. A 2 (condition: helper vs non-helper) x 2 (recall: Part 2 real self circles vs Part 3 recalled real self circles) mixed-model, with repeated measures on the second factor, ANOVA found no main effect of condition, indicating no overall difference between helpers' (M = 5.66, SD = 1.23) and non-helpers' (M = 5.39, SD = 1.23) mean real-self ratings, $F(1, 206) = 2.397$, p = .123, partial η^2 = .012. There was a main effect of recall (pre-recall, M = 5.09, SD = 1.67; post-recall, M = 5.96, SD = 1.21, $F(1, 206) = 65.043$, $p < .001$, partial η^2 = .240), which was qualified by a condition x recall interaction ($F(1, 206) = 4.203$, p = .042, partial η^2 = .020, descriptive statistics provided in Table 4). Thus, whilst feelings of authenticity increased with recall, the interaction indicates there was a greater increase in helpers' than non-helpers' authenticity.

Table 4

Real Self Means and Standard Deviations by Condition and Recall

Real self	Pre-recall	Post-recall
Non-helpers (SD)	5.06 (1.67)	5.71 (1.36)
Helpers (SD)	5.11 (1.69)	6.20 (1.02)

To determine the nature of the interaction, post-hoc independent-samples t-tests were conducted and found no significant difference between helpers' and non-helpers' pre-recall ratings of real-self, $t(220) = 0.021$, $p = .983$, $d = 0.03$, but post-recall helpers had significantly higher real-self than non-helpers, $t(203) = 2.516$, $p = .013$, $d = 0.43$ (Figure 8). Thus the act of helping had no effect on helpers' feelings of authenticity at the moment of helping. Instead, there was a delayed response to the effect of helping such that helpers (versus non-helpers) showed greater feelings of recalled authenticity.

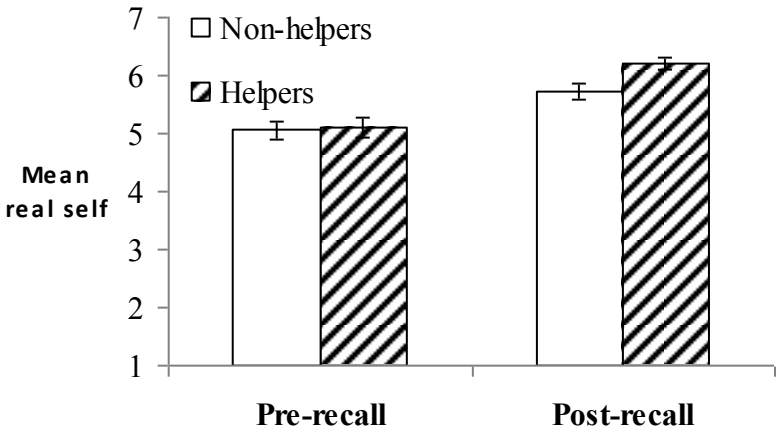


Figure 8. Non-helpers' and helpers' real-self ratings pre-recall and post-recall. Error bars represent standard errors.

Moderators. To test for potential moderation by participants' traits, the ANOVA described above was repeated a number of times, each time with a different (standardized) trait in a full interaction model: Schwartz benevolence, self-transcendence, trait authenticity, trait altruism, trait communal orientation and overall creativity (calculated as the mean of the three measures: insight, IPIP creativity and the creativity scale for different domains). Between 2 and 5 outliers were removed. The main effect of recall and condition x recall interaction found previously were still significant (at least marginally) after controlling for each trait (Table 5). Therefore helpers' (versus non-helpers') greater increases with recall cannot be entirely accounted for by participants' traits. The condition x trait interactions were non-significant for all traits, nor, importantly, were the condition x recall x trait interactions (Table 6). Overall, it appears the participants' individual differences traits did not moderate the effects of condition and recall; regardless of underlying traits, all participants' authenticity increased with recall, with helpers showing greater increases in their recalled real self than non-helpers.

Table 5

Analysis of Variance with Trait Covariates for Main Effects of Recall and Interaction Effects of Recall x Condition on Real Self

Covariate and effect	*df*	*F*	*p*	Partial η^2
Schwartz benevolence				
Recall	1, 204	65.615	<.001	.243
Recall x condition	1, 204	4.028	.046	.019
Self-Transcendence				
Recall	1, 201	62.626	<.001	.238
Recall x condition	1, 201	3.748	.054	.018
Trait authenticity				
Recall	1, 203	64.890	<.001	.242
Recall x condition	1, 203	3.973	.048	.019
Trait altruism				
Recall	1, 203	62.994	<.001	.237
Recall x condition	1, 203	3.583	.060	.017
Trait communal orientation				
Recall	1, 205	56.358	<.001	.216
Recall x condition	1, 205	3.046	.082	.015
Creativity				
Recall	1, 202	63.932	<.001	.240
Recall x condition	1, 202	3.539	.061	.017

Table 6

Analysis of Variance with Trait Covariates for Interaction Effects of Condition x Trait and Condition x Recall x Trait on Real Self

Covariate and effect	*df*	*F*	*p*	Partial η^2
Schwartz benevolence				
Condition x trait	1, 204	0.034	.854	.000
Condition x recall x trait	1, 204	0.545	.461	.003
Self-Transcendence				
Condition x trait	1, 201	0.281	.596	.001
Condition x recall x trait	1, 201	1.673	.197	.008
Trait authenticity				
Condition x trait	1, 203	2.935	.088	.014
Condition x recall x trait	1, 203	0.029	.865	.000
Trait altruism				
Condition x trait	1, 203	1.730	.190	.008
Condition x recall x trait	1, 203	0.046	.831	.000
Trait communal orientation				
Condition x trait	1, 205	0.001	.975	.000
Condition x recall x trait	1, 205	0.000	.999	.000
Creativity				
Condition x trait	1, 202	1.213	.272	.006
Condition x recall x trait	1, 202	0.173	.678	.001

Ideal self circles and ought self circles. The analysis carried out on the real self circles measure was repeated on the ideal self circles measure and separately on the ought self circles measure (analysis and results provided in Appendix C). The pattern of results was similar to that seen for the real self: At the time of helping there was no effect of condition, however, upon recall all participants showed increased recalled ideal self, or increased recalled ought self, with helpers showing greater increases than non-helpers.

Mediation. Given the similarity in the pattern of results of the ideal self circles and real self circles it is possible that the ideal self is playing a mediating role between condition and recalled real self, such that helping activates the ideal self which, in turn, activates "feeling real". Such a mediating role could result from self-enhancement biases (Swann, 1990).

Testing for the mediating effect of recalled ideal self was carried out (full details of the procedure and results are provided in Appendix C). The results supported the hypothesis that recalled ideal self plays a full mediating role between condition and recalled real self.

However, Cole and Maxwell (2003) have argued that concurrent mediation can not support a causal interpretation and Jose (2008) argues that mediation analyses should be re-run for different potential models to better understand the relationships between the variables. It has also been suggested that this relationship could run in the opposite direction, with feeling real contributing to feeling ideal (Lenton et al., 2011). Therefore, the analyses above was repeated, but with the mediating pathway inverted, such that, recalled ideal self was the criterion variable and recalled real self the potential mediator (full details of the procedure and results are provided in Appendix C)..

The analysis provided evidence for full mediation by recalled real self. Therefore there is now conflicting evidence for recalled real self to be mediating the effects of condition on recalled ideal self.

Wood authenticity scale. Seven outliers were removed. A 2 (condition: helper vs non-helper) x 2 (recall: Part 2 state version of the Wood authenticity scale vs Part 3 recalled state version of the Wood authenticity scale) x 3 (Wood authenticity

subscales: authentic living vs self-attunement vs rejecting external influence) mixed-model ANOVA, with repeated measures on the second and third factors, found no significant main effect of condition. That is, there was no overall difference between helpers' (M = 5.46, SD = 0.76) and non-helpers' (M = 5.31, SD = 0.76) mean ratings of their authenticity, $F(1, 204) = 1.870$, $p = .173$, partial $\eta 2 = .009$.

There was a significant main effect of recall (pre-recall, M = 5.15, SD = 0.93; post-recall, M = 5.62, SD = 0.86, $F(1, 204) = 55.440$, $p < .001$, partial $\eta^2 = .214$), showing that participants' feelings of authenticity increased with recall. However, a non-significant condition x recall interaction ($F(1, 204) = 1.817$, $p = .179$, partial $\eta^2 = .009$) indicated that, unlike the real self circles measure, helpers and non-helpers did not differ in the degrees to which their authenticity increased upon recall (descriptive statistics provided in Table 7).

Table 7

Authenticity Means and Standard Deviations by Condition and Recall

Authenticity	Pre-recall	Post-recall
Non-helpers (SD)	5.12 (1.16)	5.51 (1.18)
Helpers (SD)	5.18 (1.15)	5.74 (0.96)

Moderators. To test for potential moderation by participants' traits each (standardized) trait was entered into the ANOVA in a full interaction model. Between 6 to 10 outliers were removed, depending on the moderating variable under analysis. The main effect of recall remained significant after controlling for each trait (Table 8). The main effect of condition and the condition x recall interaction remained non-significant (Table 9). Also non-significant were the condition x trait and the condition x recall x trait interactions (Table 10).

Table 8

Analysis of Variance with Trait Covariates for the Main Effect of Recall on Authenticity

Covariate and effect	*df*	*F*	*p*	Partial η^2
Schwartz benevolence				
Recall	1, 202	55.413	<.001	.215
Self-Transcendence				
Recall	1, 201	52.666	<.001	.208
Trait authenticity				
Recall	1, 199	65.521	<.001	.248
Trait altruism				
Recall	1, 201	59.521	<.001	.228
Trait communal orientation				
Recall	1, 203	56.420	<.001	.217
Creativity				
Recall	1, 200	52.475	<.001	.208

Table 9

Analysis of Variance with Trait Covariates for the Main Effect of Condition and the Interaction Effect of Condition x Recall on Authenticity

Covariate and effect	*df*	*F*	*p*	Partial η^2
Schwartz benevolence				
Condition	1, 202	1.851	.175	.009
Condition x recall	1, 202	1.742	.188	.009
Self-Transcendence				
Condition	1, 201	1.741	.188	.009
Condition x recall	1, 201	2.058	.153	.010
Trait authenticity				
Condition	1, 199	2.736	.100	.014
Condition x recall	1, 199	0.716	.398	.004
Trait altruism				
Condition	1, 201	1.290	.257	.006
Condition x recall	1, 201	1.348	.247	.007
Trait communal orientation				
Condition	1, 203	1.831	.178	.009
Condition x recall	1, 203	1.729	.190	.008
Creativity				
Condition	1, 200	2.037	.155	.010
Condition x recall	1, 200	0.924	.338	.005

Table 10

Analysis of Variance with Trait Covariates for the Interaction Effects of Condition x Trait and Condition x Recall x Trait on Authenticity

Covariate and effect	*df*	*F*	*p*	Partial η^2
Schwartz benevolence				
Condition x trait	1, 202	0.066	.797	.000
Condition x recall x trait	1, 202	0.349	.556	.002
Self-Transcendence				
Condition x trait	1, 201	0.052	.820	.000
Condition x recall x trait	1, 201	0.067	.795	.000
Trait authenticity				
Condition x trait	1, 199	2.417	.122	.012
Condition x recall x trait	1, 199	0.007	.934	.000
Trait altruism				
Condition x trait	1, 201	0.006	.937	.000
Condition x recall x trait	1, 201	0.754	.386	.004
Trait communal orientation				
Condition x trait	1, 203	2.218	.138	.011
Condition x recall x trait	1, 203	0.863	.354	.004
Creativity				
Condition x trait	1, 200	2.259	.134	.011
Condition x recall x trait	1, 200	1.284	.259	.006

Although the condition x recall x Wood subscales x trait interaction was non-significant for each trait (Table 11), there were several significant interactions involving the Wood subscales (Table 12 and Table 13). In particular, the recall x Wood subscales interaction became significant for each trait model and the condition x Wood subscales x trait interaction was significant for: Schwartz benevolence, self-transcendence, trait authenticity and trait communal orientation. Furthermore, the condition x recall x Wood subscales interaction was significant for the trait authenticity model. The significant interactions involving Wood subscales indicate that some of the effects depend on the subscale involved and, thus, are specific to a particular aspect(s) of authenticity. The nature of each of these interactions is examined in turn.

Table 11

Analysis of Variance with Trait Covariates for Condition x Recall x Wood Subscales x Trait Interaction Effect on Authenticity

Covariate and effect	*df*	*F*	*p*	Partial η^2
Schwartz benevolence				
Condition x Recall x Wood subscales x Trait	2, 404	0.055	.946	.000
Self-Transcendence				
Condition x Recall x Wood subscales x Trait	2, 402	0.204	.816	.001
Trait authenticity				
Condition x Recall x Wood subscales x Trait	2, 398	0.891	.411	.004
Trait altruism				
Condition x Recall x Wood subscales x Trait	2, 402	2.706	.101	.013
Trait communal orientation				
Condition x Recall x Wood subscales x Trait	2, 406	0.569	.566	.003
Creativity				
Condition x Recall x Wood subscales x Trait	2, 400	1.347	.261	.007

Table 12

Analysis of Variance with Trait Covariates for Recall x Wood Subscales Interaction Effect on Authenticity

Covariate and effect	*df*	*F*	*p*	Partial η^2
Schwartz benevolence				
Recall x Wood subscales	2, 404	20.296	<.001	.091
Self-Transcendence				
Recall x Wood subscales	2, 402	19.590	<.001	.089
Trait authenticity				
Recall x Wood subscales	2, 398	20.860	<.001	.095
Trait altruism				
Recall x Wood subscales	2, 402	20.128	<.001	.091
Trait communal orientation				
Recall x Wood subscales	2, 406	20.539	<.001	.092
Creativity				
Recall x Wood subscales	2, 400	17.603	<.001	.081

Table 13

Analysis of Variance with Trait Covariates for Selected Interaction Effects on Authenticity

Covariate and effect	*df*	*F*	*p*	Partial η^2
Schwartz benevolence				
Condition x Wood subscales x trait	2, 404	3.598	.028	.017
Condition x recall x Wood subscales	2, 370	2.015	.139	.010
Self-Transcendence				
Condition x Wood subscales x trait	2, 402	5.316	.005	.026
Condition x recall x Wood subscales	2, 369	1.878	.158	.009
Trait authenticity				
Condition x Wood subscales x trait	2, 398	3.044	.049	.015
Condition x recall x Wood subscales	2, 370	3.801	.023	.019
Trait altruism				
Condition x Wood subscales x trait	2, 402	2.286	.103	.011
Condition x recall x Wood subscales	2, 368	1.597	.204	.008
Trait communal orientation				
Condition x Wood subscales x trait	2, 406	3.659	.027	.018
Condition x recall x Wood subscales	2, 372	2.053	.134	.010
Creativity				
Condition x Wood subscales x trait	2, 400	0.305	.737	.002
Condition x recall x Wood subscales	2, 365	2.296	.107	.011

Wood authenticity subscales. To understand the significant interactions involving condition and the Wood authenticity subscales, a series of 2 (condition: helper vs non-helper) x 2 (recall: Part 2 state version of the individual Wood authenticity subscale vs Part 3 recalled state version of the individual Wood authenticity subscale) mixed-model ANOVAs were run, with each relevant trait entered separately in a full interaction model. These analyses were used to test the effects of recall, condition and traits on each of the individual Wood authenticity subscales separately: authentic living, self-attunement and rejecting external influence.

Condition x trait interaction. With respect to the condition x Wood subscales x trait interaction further analyses showed that the condition x trait interaction was marginally significant for authentic living for the trait authenticity model, significant for self-attunement for the trait authenticity model and significant for rejecting external influence for each of the communal orientation model and the self-transcendence model (Table 14).

Table 14

Analysis of Variance with Trait Covariates for Significant Interaction Effects of Condition x Trait on Each Authenticity Subscale

Interaction by subscale	*df*	*F*	*p*	Partial η^2
Condition x trait authenticity				
Authentic living	1, 207	2.806	.095	.013
Self-attunement	1, 205	6.305	.013	.030
Condition x self-transcendence				
Rejecting external influence	1, 208	4.127	.043	.019
Condition x trait communal orientation				
Rejecting external influence	1, 209	6.703	.010	.031

Further breakdown of the marginally significant two-way on the authentic living subscale indicated that participants low in trait authenticity (below the mean) yielded a significant effect of condition (non-helpers, $M = 5.08$, $SD = 0.91$; helpers, $M = 5.41$, $SD = 0.82$, $F(1, 100) = 5.840$, $p = .017$, partial $\eta^2 = .055$), whereas for participants high in trait authenticity (above or equal to the mean), condition had no effect (non-helpers, $M = 5.77$, $SD = 0.97$; helpers, $M = 5.99$, $SD = 069$, $F(1, 100) = 2.283$, $p = .134$, partial $\eta^2 = .022$).

Further breakdown of the significant two-way on the self-attunement subscale also indicated that people low in trait authenticity yielded a significant effect of condition (non-helpers, $M = 4.74$, $SD = 1.05$.; helpers, $M = 5.35$, $SD = 1.01$, $F(1, 101) = 8.881$, $p = .004$, partial $\eta^2 = .081$), whereas for people high in trait authenticity, condition had no effect (non-helpers, $M = 6.05$, $SD = 0.87$; helpers, $M = 5.95$, $SD = 0.87$, $F(1, 104) = 0.421$, $p = .518$, partial $\eta^2 = .004$).

The results show that for participants with low trait authenticity, helping resulted in increased feelings of authentic living or self-attunement; whereas helping made no significant difference for those with high authenticity (Figure 9 and Figure 10). Thus there was a degree of malleability in feelings of authentic living or self-attunement for those low in trait authenticity that was not present for those high in the trait.

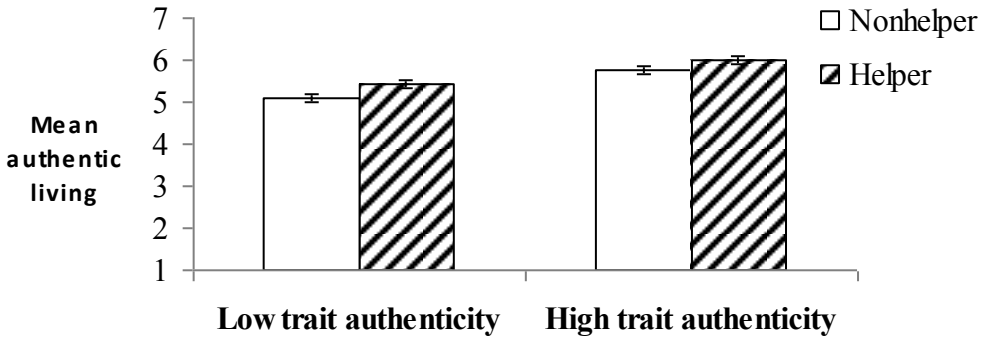


Figure 9. Non-helpers' and helpers' mean authentic living ratings for participants low and high in trait authenticity. Error bars represent standard errors.

Figure 10. Differences between non-helpers' and helpers' mean self-attunement ratings for participants low and high in trait authenticity. Error bars represent standard errors.

Further breakdown of the significant two-way on the rejecting external influence subscale gave a different pattern of results. As previously, each trait was split into high and low levels, but no effect of condition was found for either the self-transcendence or communal orientation model (Table 15). However, as shown in Figure 11 and Figure 12 these were cross-over interactions. For those with low self-transcendence, helping slightly decreased their feeling of rejecting external influence, whereas for those high in self-transcendence, helping made little difference. The pattern for trait communal orientation was the same, though more clearly showed that, for those low in the trait, helping decreased their feelings of rejecting external influence. These results imply that participants low in these traits felt, to some extent, they had accepted external influence as a result of being involved in the helping task

Table 15

Analysis of Variance for Main Effect of Condition on Rejecting External Influence for Participants High or Low in Self-Transcendence or Communal Orientation

	Non-helpers		Helpers					
Covariate and effect	*M*	*SD*	*M*	*SD*	*df*	*F*	*p*	Partial η^2
Low trait self-transcendence								
Main effect of condition	5.06	1.05	4.96	1.09	1, 118	0.295	.588	.002
High trait self-transcendence								
Main effect of condition	4.93	0.99	4.98	1.03	1, 91	0.060	.807	.001
Low trait communal orientation								
Main effect of condition	5.02	1.02	4.84	1.07	1, 98	0.704	.403	.007
High trait communal orientation								
Main effect of condition	5.07	1.04	4.99	0.97	1, 111	0.146	.703	.001

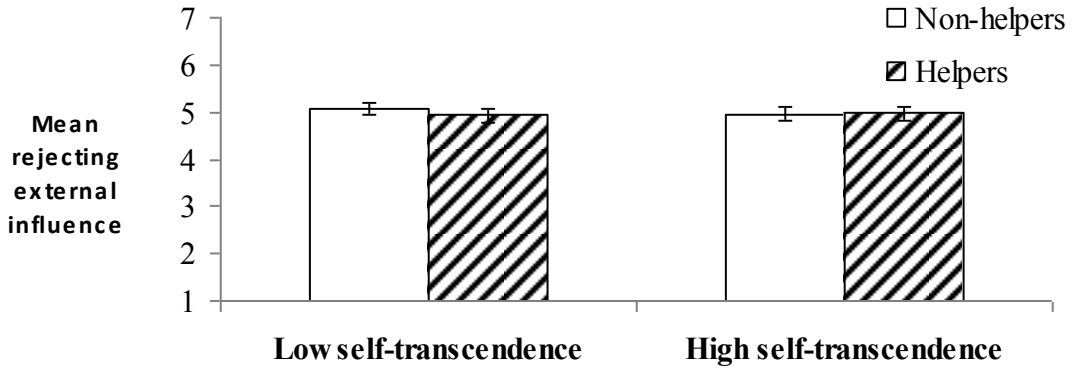


Figure 11. Condition effect on rejecting external influence mean ratings split by low and high self-transcendence. Error bars represent standard errors.

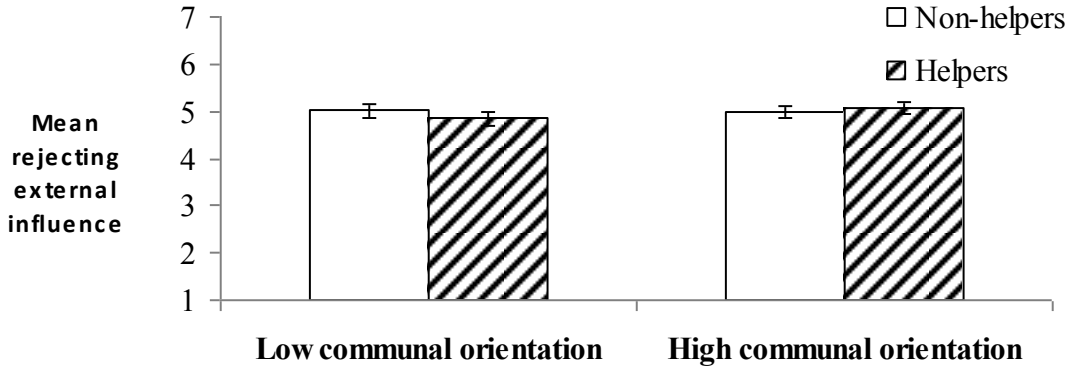


Figure 12. Condition effect on rejecting external influence mean ratings split by low and high trait communal orientation. Error bars represent standard errors.

Condition x recall interaction. With respect to the condition x Wood subscales x recall interaction further analyses showed that the condition x recall interaction was significant only for the authentic living subscale for the trait authenticity model and not for the self-attunement or rejecting external influence subscales (Table 16). Although there was no significant condition x recall interaction for self-attunement or rejecting external influence, there was a main effect of recall for the trait authenticity model for each of these subscales (Table 17). These results show that although the self-attunement and rejecting external influence subscales each increased with recall, helpers did not increase more than non-helpers.

Returning to the significant condition x recall interaction found for authentic living, this interaction indicates that helpers increased their ratings of authentic living with recall, whereas non-helpers' authentic living ratings appear to have been unaffected by recall (Figure 13).

Subsequently, univariate ANOVA (with trait authenticity as covariate) was used to directly compare mean authentic living ratings between helpers and non-helpers in pre-recall and then also in post-recall. In pre-recall there was no significant difference between helpers ($M = 5.56$, $SD = 0.79$) and non-helpers ($M = 5.44$, $SD = 0.82$), $F(1, 203) = 1.343$, $p = .248$, partial $\eta^2 = 0.07$). In post-recall, helpers ($M = 5.84$, $SD = 0.89$) were significantly higher than non-helpers ($M = 5.43$, $SD = 0.92$), $F(1, 201) = 11.263$, $p = .001$, partial $\eta^2 = 0.053$.

When trait authenticity is controlled, the results show that, at the time, helping had no significant effect on feelings of authentic living. Instead, it was only recalling the helping task 2 weeks later that resulted in increased recalled authentic living. Whereas for non-helpers, authentic living was unchanged upon recall.

Table 16

Analysis of Variance with Trait Authenticity Covariate for Interaction Effects of Condition x Recall on Each Authenticity Subscale

	Non- helpers		Helpers					
	Pre-recall	Post-recall	Pre-recall	Post-recall				
Authenticity subscale	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*df*	*F*	*p*	Partial η^2
Authentic living	5.42 (0.72)	5.43 (0.92)	5.56 (0.79)	5.85 (0.89)	1, 200	4.799	.030	.023
Self-attunement	5.13 (0.12	5.63 (0.10)	5.26 (0.13)	6.01 (0.10)	1, 205	1.988	.160	.010
Rejecting external influence	4.63 (0.11)	5.47 (0.11)	4.68 (0.12)	5.32 (0.12)	1, 206	1.681	.196	.008

Table 17

Analysis of Variance with Trait Authenticity Covariate for Main Effect of Recall on Authenticity Subscales

	Pre-recall	Post-recall				
Authenticity subscale	*M (SD)*	*M (SD)*	*df*	*F*	*p*	Partial η^2
Self-attunement	5.21 (1.23)	5.84 (0.98)	1, 205	53.314	<.001	.206
Rejecting external influence	4.63 (1.17)	5.38 (1.20)	1, 206	58.447	<.001	.226

Main Study

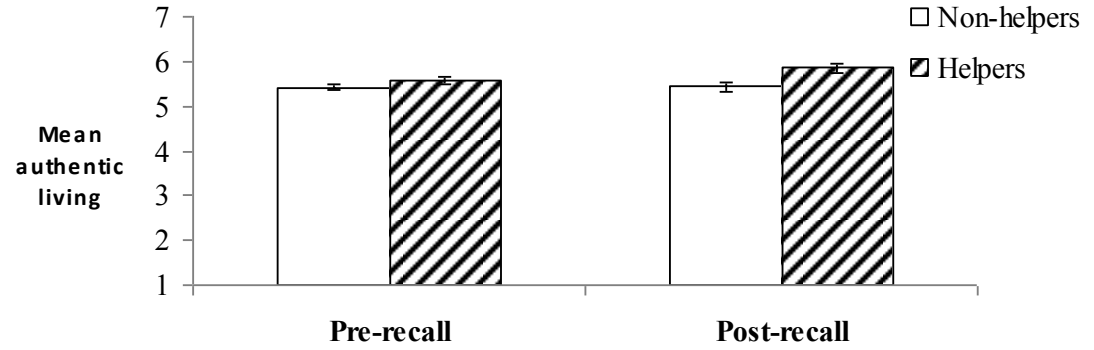


Figure 13. Condition x recall interaction effect on mean authentic living ratings with trait authenticity as covariate. Error bars represent standard errors.

Discussion

Before discussing the results in relation to my prior predictions, there were two major unanticipated findings that require addressing since their interpretation has a direct bearing on the analyses of my predictions. First, there was no significant difference between helpers' and non-helpers' authenticity at the time of helping. Second, non-helpers reported increased recalled authenticity. I consider each finding in turn before discussing my earlier hypotheses.

Effect of Helping on State Authenticity

There is one prior research report that sheds light on the lack of a significant difference between helpers' and non-helpers' state authenticity. In their phenomenological studies, Lenton et al. (2011) asked participants to describe an occasion they had felt "most me" and indicate when they had realised they felt this way. Typically participants reported they had not realised they were experiencing authenticity until a short time afterward. Therefore, authenticity may only be recognised after a period of delay.

Flow and plateau-experiences. The suggestion of a delay in authenticity recognition raises the question of what prevents immediate recognition. Possibly, at the time, attention is focused elsewhere or one is too absorbed in the experience to monitor changes within oneself. Lack of self-awareness in-the-moment is reminiscent of descriptions of "flow" experiences (Csikszentmihalyi, 1975), in which

temporarily losing awareness of self has been identified as a common theme (Chen, Wigand, & Nilan, 2000).

Although flow is considered to share qualities with peak-experience (intense joy), it is also considered a distinct construct with its own distinguishing features (Privette, 1983). Peak experiences were considered by Maslow (1971) as a way everyone could experience authenticity. Maslow (1994) wrote extensively on peak-experience, but conceded he had overlooked the role of "plateau-experiences" (p.xiv) in authenticity. Maslow (1994) described plateau-experiences as gentler than peak-experience, they are "pure enjoyment" (p. xv) with a quality of "casualness and lounging about" (p. xv). Such descriptions are similar to those of flow which is associated with intrinsically rewarding experiences (Privette & Bundrick, 1991) and sought for its own sake, because it is "fun" (p. 171). Such descriptions are also strikingly similar to common themes identified in state authenticity (Lenton et al, 2011), such as "fun" (p. 22) and "hanging out" (p. 22). Given the correspondence in descriptions of plateau-experiences, flow and state authenticity it is possible these are similar or related experiences.

Investigators of flow have suggested that the "loss of self" is a result of limited capacity for self-reflective processes during the experience. Therefore, questions arose over the most appropriate time to gather self-reports (Schuler & Brunner, 2009). Schuler and Brunner (2009) directly compared two reporting methods in a study of flow in marathon runners. They found that retrospectively measured flow scores were consistently higher than experience-sampling scores, although both types of reports were equally good at predicting the hypothesised role of flow in race performance.

Given the other similarities between flow and state authenticity, the "loss of self" in flow and lack of recognition of state authenticity could have common origins and outcomes, that is, low self-reflection capacity at the time of the experience, then, a necessary period of reflection, before enhanced recognition in retrospect.

Contrast with previous work. If recognition of state authenticity requires a period of reflection, how can this be reconciled with Fleeson and Wilt's (2010) findings that specific personality state behaviours were associated with greater

Discussion

authenticity *at the time* of the behaviours? One possibility is that there are different types or classes of authenticity, with more or less need for reflection.

There is evidence for different types of authentic experience: Lenton et al. (2011) found distinct clusters of experience, each with varying characteristics. Clusters were distinguishable partly by differing levels of private and public self-consciousness. Privette and Bundrick (1991) found a strong sense of self in descriptions of peak-experience, whereas flow experiences have been characterised by loss of self (Chen et al., 2000). Therefore, personality state behaviours and the expression of values could plausibly belong to different classes of authenticity, with each class bearing a different need for reflection time before its recognition.

The suggestion of classes of authenticity with differing needs for reflection provides a satisfactory explanation of Fleeson and Wilt's (2010) findings as well as the current results. Expressing personality behaviours or helpfulness results in different classes of authenticity, one class is felt immediately and the other requires a period of reflection. Thus the suggestion forms a cohesive interpretation of both sets of results.

Increases in Recalled Authenticity in Helpers and Non-helpers

The second major unexpected result was that participants in the non-helping condition reported increased recalled authenticity. The detailed findings were that there was an increase in recalled authenticity, for all participants, for nearly all measures of authenticity. Feelings of closeness to the real self increased in both helping and non-helping conditions. When trait authenticity was controlled, ratings of whole Wood authenticity, self-attunement and rejecting external influence all increased for both conditions. The exception was recalled authentic living, which only increased for helpers.

Retrospectively recognised authenticity. I have proposed that expressing helpfulness leads to increased authenticity after a period of reflection, therefore, this accounts for the increased recalled authenticity observed in the helping condition. However, it is not immediately clear why non-helpers also reported increases in authenticity upon recall. I consider one possible explanation here, and other possibilities in the limitations section below.

If authenticity is recognised upon reflection, then simply the attempt to recall earlier experiences could result in increased awareness of how close one had been to the true self. As long as the earlier experience was not *inauthentic*, recall could boost self-reflection and thus increase retrospective recognition of authenticity, Although the non-helping condition was a "control", participants knew they were involved in experimental work they presumably felt worthwhile, at least to the extent that they had agreed to participate. Thus, even non-helpers when recalling previous authenticity levels would be expected to show increases. An increase in non-helpers' recalled authenticity is consistent with the Wood et al. (2008) model that posits that increases in self-awareness can reduce feelings of discrepancy from the true self and so increase feelings of authenticity.

Whether the experimental instruction to reflect on past experience prompted recognition of past authenticity or whether recognition had already taken place is an open question. But, if encouragement to recall potentially authentic experiences leads to recognition of authenticity that would otherwise go unnoticed this could be of practical import, particularly if associated mental health benefits were also accrued.

Real self circles measure. The findings from the real self measure fit comfortably into the interpretation above: Upon recall both helpers and non-helpers showed increases in their remembered closeness to the real self, but helpers showed greater increases than non-helpers. For participants in both conditions, at some point after the event, reflection led to recognition of the earlier closeness to the real self, leading to increased recalled authenticity. Participants in the helping condition reported greater increases than non-helpers because the helpers' earlier expression of helpfulness allowed greater reduction in felt discrepancy from the real self, resulting in additional increases in recalled authenticity.

Wood authenticity measure. The results from the Wood authenticity measure were more complex. For authentic living, helpers showed increased recalled authenticity, but non-helpers showed no increase. For self-attunement and rejecting external influence, both conditions showed increased recalled authenticity, but helpers did not show greater increases than non-helpers.

Discussion

The results indicate that the experimental manipulation acted primarily on the authentic living aspect of authenticity. Authentic living describes the degree of concordance between one's actions and the true self and, as such, is the most behavioural aspect of the Wood et al. (2008) model. Whereas, self-attunement and rejecting external influence are related to experience and awareness. In this respect, it is unsurprising that the expression of a particular behaviour, helpfulness, produced targeted effects on authentic living. For helpers, reflection led to awareness of greater closeness to the true self for all aspects of authenticity, but particularly authentic living due to the realisation of having acted in accordance with their true self through the expression of helpful behaviour. For non-helpers, although reflection allowed recognition of some aspects of authenticity, this was not the case for authentic living, due to the absence of a specific behaviour to elicit change in this more behavioural aspect.

In summary, non-helpers showed increases in recalled authenticity as a result of reflection that led to recognition of earlier experiential and awareness related aspects of authenticity. Helpers showed similar increases, but their earlier helping behaviour meant there was additional retrospective recognition of closeness to the real self and the authentic living aspect of authenticity.

Hypotheses

Consideration of the unanticipated findings now allows a better starting point from which to assess the original hypothesised outcomes of the study. I now look at each hypothesis in turn.

Hypothesis 1. I predicted that helping others would lead to increases in state authenticity, regardless of underlying helpfulness-traits. As has been reviewed, helping did not result in increased state authenticity. However, there was evidence that helping led to increased recalled authenticity for specific aspects of authenticity. Although testing state-content significance versus trait-consistency is no longer relevant for immediately-felt authenticity, the test is relevant to the changes in authenticity observed at recall.

Real self circles measure. Participants in the helping condition reported greater increases in ratings of the real self measure upon recall, than non-helpers. However,

there was no significant moderation of this condition by recall interaction by any of the helpfulness-traits: Schwartz benevolence, self-transcendence, altruism or communal orientation. The lack of moderation by traits indicates there was no support for trait-consistency. Instead, the results support the state-content significance of helping behaviour for the real self, that is, regardless of one's own helpfulness traits, helping behaviour increases recognition of closeness to the real self after a period of reflection.

Wood authenticity measure. Overall, regardless of recall, helpers showed significantly higher authentic living and higher self-attunement than non-helpers. Participants' helpfulness-traits did not moderate this effect of helping. As with the real self measure, this is congruent with the state-content significance hypothesis that helping per se, rather than accordance with traits, leads to increases in authenticity.

Although there was no moderation by helpfulness-traits, there was moderation by participants' trait authenticity. Only helpers with lower than average levels of trait authenticity showed higher authentic living and self-attunement than non-helpers, helpers high in trait authenticity were unaffected. It appears those with low trait authenticity were manipulated by the helping task, whereas those with high trait authenticity were not.

The difference between those high and low in trait authenticity may simply be the result of a ceiling effect in those high in the trait. Alternatively, the difference could speak to the nature of the relationship between state and trait authenticity, a relationship that is not yet fully understood (Lenton et al., 2011). One conceptualisation of trait authenticity could be that those high in the trait more readily experience state authenticity, and so have frequent spikes of authenticity from a typical baseline level. A report (Lenton et al., 2011) of a moderate correlation between trait authenticity and frequency of experiencing authenticity lends support to this interpretation. Alternatively, those high in the trait could have less variability of experience and a more stable, but higher than average, baseline. The lack of malleability in response to the helping task, in those high in trait authenticity, provides some support for the latter understanding. However, these two descriptions

Discussion

are not completely orthogonal and the explanation is likely to be more complex, perhaps involving a combination of these conceptualisations.

Although increases were found in helpers for both authentic living and self-attunement, it was only for authentic living that helping was specifically associated with increases upon recall. When trait authenticity was controlled, helpers and non-helpers showed similar increases in recalled self-attunement. Whereas, for authentic living, helpers reported increases with recall, but non-helpers were unaffected by recall. The effect of recall on helpers' authentic living was not dependent upon underlying helpfulness-traits, and so, these results provide support for the state-content significance hypothesis for authentic living. Thus, regardless of one's own helpfulness-traits, helping behaviour led to increased recognition of authentic living after a period of reflection.

Exceptions to state-content significance. Although overall there was only support for the state-content significance of helping behaviour there was one exception. For rejecting external influence, the traits self-transcendence and communal orientation each had a significant interaction with condition: Participants low in the traits reported decreased rejecting external influence upon recall. The most probable explanation is that those low in the traits felt obliged to help the unknown participant and it was their feeling of obligation that was expressed in their lowered rejecting external influence.

The relevance of results relied on the prerequisite of autonomy in the helping task, but it appears that for participants low in self-transcendence or communal orientation the task did not feel autonomous. However, since neither self-transcendence nor communal orientation traits moderated other aspects of authenticity, it seems likely that the effects of lowered autonomy were restricted to the rejecting external influence aspect of authenticity. The suggestion that one aspect of authenticity can respond differently from other aspects is consistent with Kernis and Goldman's (2006) multicomponent conceptualisation. Kernis and Goldman (2006) recognised that an individual can operate authentically in one aspect but not in others and that there can be conflicts between different aspects of authenticity.

Implications for expression of values. In summary, although predictions in favour of the state-content significance hypothesis of helping behaviour for immediately-felt authenticity were not correct, there was good support for the hypothesis in the way authenticity was recalled. Recalled closeness to the real self and authentic living each increased more in those involved in the helping task, regardless of participants' underlying helpfulness-traits.

Helping behaviour is an enactment of the benevolence value-type (Schwartz, 1992), as such, it represents behaviour that expresses values. Overall, these results are consistent with the hypothesis that behavioural content involving expression of values produces retrospective recognition of authenticity. The importance of behavioural content, rather than consistency with personal value-preferences, lends support to the proposal that authenticity may act as a "reward" for functionally adaptive behaviours, in this instance, benevolence.

Hypothesis 2. I predicted that in-the-moment reports of authenticity would only show evidence of state-content significance, whilst retrospective reports would show evidence of trait-consistency. As discussed, there were no significant differences between helpers' and non-helpers' state authenticity and therefore, although, predictions for in-the-moment reports were incorrect, they are no longer of relevance. However, the expectation that retrospective reports would show evidence of trait-consistency remains pertinent.

Contrary to expectations, there was no relevant evidence for trait-consistency in retrospective reports. However, this result contrasts with the one other report I have identified, by Fleeson and Wilt (2010), comparing in-the-moment to retrospective reports of authenticity. Whilst Fleeson and Wilt only found evidence for state-content significance from in-the-moment reports, they found simultaneous support for state-content significance and trait-consistency in their retrospective reports.

There were two main differences between Fleeson and Wilt's study and the present study. First, Fleeson and Wilt investigated the expression of personality state behaviours rather than values. Therefore, the differences between their report and the current study may be due to the class of authenticity under investigation. Second, Fleeson and Wilt's retrospective reports asked about "times" (p. 22) you feel you are

expressing your true self, rather than recalling a specific episode. It is possible that participants treated recalling numerous occasions of authenticity as a different type of task from recalling a specific episode. The Selective Accessibility Model (Mussweiler, 2003) proposed that when comparing your current self to a past self, if you are focused on similarities then you assimilate to the "self" being compared. It is possible that when trying to produce an individual rating, for an adjective describing the authentic self, across many episodes of authenticity one looks for what each episode has in common. Looking for commonalities would create a focus on similarities and thus lead to consistency with personal traits. Therefore, Fleeson and Wilt's (2010) retrospective method may have unwittingly encouraged trait-consistent reports.

Regardless of the details of differences between the current study and the Fleeson and Wilt (2010) study, what both studies have in common is that retrospective reports differed from in-the-moment reports of authenticity. Therefore, investigators of state authenticity need to take account of the changing nature of reports over time within their experimental designs.

Limitations and Future Work

There were a number of limitations in the main study that warrant consideration.

State Authenticity

I have interpreted the failure to find a significant difference between helpers' and non-helpers' state authenticity to be the result of delayed recognition of authenticity. However, the methodology employed in the current study could not rule out other interpretations. The helping behaviour stimulus may have been insufficiently strong or helping behaviour may not have any significant effect on authenticity. Firstly, considering the possibility of insufficient stimulus strength. As discussed within the main study results, when performance on the puzzles task was taken into account, helpers, relative to non-helpers, reported significantly higher general helpfulness and higher self-esteem, a state that can result from autonomous helping (Weinstein & Ryan, 2010). These heightened states suggested the helping

stimulus had some degree of efficacy, thus reducing concerns that stimulus strength was an issue.

Secondly, it is possible that helping does not have any significant effect on authenticity. Theoretical considerations suggest this option is unlikely (Hitlin, 2003; Hitlin, 2007; Rogers, 1961), but it is difficult to discriminate empirically between a state that is completely unaffected by a given behaviour, and a state that is affected, but not immediately recognised. The credibility of the latter option was enhanced by the discovery of theoretically meaningful results upon recall. Nevertheless, to distinguish definitively between the various interpretations requires further testing. One possibility is the use of reaction time testing to directly test true self accessibility and determine whether the true self is at least primed at the time of the behaviour. Similar reaction time tests have been successfully employed by Bargh (2002) and Schlegel (2011).

Period for Reflection

Further investigation will also be needed to confirm the earlier suggestion that some classes of authenticity require a period of reflection. A need for reflection accounted for retrospective differences between helpers and non-helpers which were absent in-the-moment. There are two further interpretations, not yet discussed, that deserve further testing. The first is that retrospective reports are simply the product of memory biases and reconstruction. Memory generally is known to be fallible (Loftus & Palmer, 1974) and autobiographical memory is thought to be continually constructed and revised (Harter, 2002). Temporal Self-Appraisal theory (Wilson & Ross, 2001) suggests that recent past selves are seen in a complimentary light. Authenticity is seen as a desirable state (Lenton et al., 2011) and so this theory could account for the general trend for recalled authenticity to increase even amongst non-helpers. However, the theory fails to explain the detailed pattern of results, for example, participants in the non-helping condition did not report higher authentic living upon recall.

Second, Lenton et al. (2011) suggested that delays in authenticity could imply that state authenticity is a "past-orientated subjective state" (Wildschut, Sedikides, Arndt, & Routledge, 2006, p. 990) similar to nostalgia. As such, possible functions of

authenticity, such as management of mood and preserving self-coherence, would be felt later when most functionally useful (Lenton et al., 2011). Therefore, like nostalgia, authenticity would be felt upon reflection and the associated benefits felt at that point.

Regardless of whether changes at recall were the result of biased memory effects or functional requirements, with hindsight, it would have been useful to have included measures such as state authenticity, mood and self-esteem in the final part of the main study. The additional measures would have allowed testing of whether recalling authenticity affected current states. The findings would have had relevance to the "past-orientated" interpretation of authenticity and also contributed to broader investigations into the relationship between reflecting on positive experiences and psychological well-being (Wood, Froh, & Geraghty, 2010). For example, recalling and listing experiences one feels grateful for, has been associated with well-being enhancement (Emmons & McCullough, 2003).

Although there are a number of alternative interpretations of the retrospective reports, the consistency of results with the Wood et al. (2008) authenticity model and state-content significance hypothesis (Fleeson & Wilt, 2010) lends support to the interpretation that recognition of some classes of authenticity requires a period for reflection. However, definitive evidence is still clearly required. Future testing could focus on the proposed need for a period of self-reflection. By varying the length of the delay period, and with the addition of distracting tasks, the process up to the point of authenticity recognition could be better elucidated.

Mediating pathway. One aspect of the retrospective reports that remains unresolved was the question of a possible mediating pathway between recalled real self and recalled ideal self. Prior theorising (Lenton et al., 2011; Swann, 1990) suggested two competing pathways: Either recalled ideal self mediates between condition and recalled real self, or vice-versa, recalled real self mediates between condition and recalled ideal self. However, each of these mediating pathways was significant. One interpretation is that recalled real self and recalled ideal self overlap on an underlying construct to such an extent that there is insufficient discriminability

Limitations and Future Work

between them, thus allowing the mediation to run in either direction. Future work could explore the similarity, and differentiation, between real self and ideal self.

Expression of Values

Finally, looking at conclusions regarding the expression of values. There was evidence that helping behaviour, regardless of underlying helpfulness-traits, influenced later recall of authenticity. Due to the top-ranked importance of benevolence (Schwartz & Boehnke, 2004), helping was an ideal preliminary test of the effects of the expression of values. However, the very importance of benevolence, could also limit the generalisability of the results to other values. Perhaps due to its typical top-ranking, participants' own benevolence traits did not emerge as a significant moderator, that is, there was insufficient variance in participants' benevolence ratings to be a true test of the trait-consistency hypothesis. There were some indications this could be the case: Benevolence had the highest mean rating (4.26 on a scale of 5 to -1) and lowest standard deviation (0.83) of all the value-types (Appendix D, Table 3). However, participants' ratings of benevolence ranged from 5 (of supreme importance) to 0 (not important), and nearly a third (32%) of participants did not rank benevolence amongst their top-ranked value-types. Future work should investigate this issue more thoroughly, with larger samples to provide greater power to detect moderation by traits. Future testing of other value-types, typically ranked less highly, will also provide confirmation of whether there is a general effect of value-expression or whether it applies only to particular values.

I proposed earlier that the experience of authenticity is to some extent a "reward" for adaptively functional behaviour, such as helping. If adaptive functionality is of importance, this predicts that behavioural content matching the universal ranking of value-types will predict levels of state authenticity, over and above participants' personal rankings. Future investigations could test specific cases of this prediction: for example, individuals who personally rank conformity above benevolence would still feel greater authenticity when expressing benevolence than when expressing conformity.

Also related to the adaptive interpretation is the ordering of events. If authenticity acts as a reward for behaviour, then necessarily authenticity must follow

Limitations and Future Work

after the behaviour. The longitudinal nature of the current study provided supportive evidence for this order of events. However, this relationship could also be a dynamic bi-directional relationship, creating a positive feedback loop encouraging and maintaining the most evolutionarily successful behaviours. With the use of longitudinal designs, future work could investigate further the directional nature of the behaviour-authenticity relationship.

Conclusion

The findings in the present study appear to confirm a brief report from phenomenological studies (Lenton et al., 2011), that participants' realisation of an authentic experience comes a short time after the event. If correct, the present study is one of the first to empirically demonstrate delayed recognition of one class of authenticity, with a need for reflection time. This study also strengthens the case initially made by Fleeson and Wilt (2010) for the state-content significance hypothesis, versus the trait-consistency hypothesis, for understanding the causes of authenticity. In addition, differences found between in-the-moment versus retrospective reports highlight the importance for future work to incorporate longitudinal designs to track the changing recognition of authenticity. The study also provides evidence of a role for value-expression in authentic experiences. Consequently, the Schwartz hierarchy of value-types could provide a basis for testing the suggestion that our most evolutionarily successful behaviour has the greatest "state-content significance" for authenticity, regardless of our typical traits. Finally, the inevitable limitations of a preliminary study such as this mean that much further testing is needed.

References

Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of other in the self scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology, 63*, 596-612.

Bardi, A., & Schwartz, S. H. (2003). Values and behavior: Strength and structure of relations. *Personality and Social Psychology Bulletin, 29*, 1207-1220. doi:10.1177/0146167203254602

Bargh, J. A., McKenna, K. Y. A., & Fitzsimons, G. M. (2002). Can you see the real me? Activation and expression of the "true self" on the internet. *Journal of Social Issues, 58*, 33-48. doi:10.1111/1540-4560.00247

Baron, R. M., & Kenny, D. A. (1986). The moderator mediator variable distinction in social psychological-research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182. doi:10.1037/0022-3514.51.6.1173

Barrett-Lennard, G. T. (1998). *Carl Rogers' helping system: Journey and substance*. London: Sage.

Bauer, J. J., & McAdams, D. P. (2004). Personal growth in adults' stories of life transitions. *Journal of Personality, 72*, 573-602. doi:10.1111/j.0022-3506.2004.00273.x

Bergin, A. E. (1980). Psychotherapy and religious values. *Journal of Consulting and Clinical Psychology, 48*, 95-105. doi:10.1037/0022-006X.48.1.95

Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A self-determination theory perspective. *Science Education, 84*, 740-756. doi:10.1002/1098-237X(200011)84:6<740::AID-SCE4>3.0.CO;2-3

Bowden, E. M., & Jung-Beeman, M. (2003). Normative data for 144 compound remote associate problems. *Behavior Research Methods Instruments & Computers, 35*, 634-639.

Buss, D. M. (1991). Evolutionary personality psychology. *Annual Review of Psychology, 42*, 459-491. doi:10.1146/annurev.ps.42.020191.002331

Chen, H., Wigand, R. T., & Nilan, M. (2000). Exploring web users' optimal flow experiences. *Information Technology & People, 13*, 263-281. doi:10.1108/09593840010359473

Clark, M. S., Oullette, R., Powell, M. C., & Milberg, S. (1987). Recipient's mood, relationship type, and helping. *Journal of Personality and Social Psychology, 53*, 94-103.

Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology, 112*, 558-577. doi:10.1037/0021-843X.112.4.558

Csikszentmihalyi, M. (1975). Play and intrinsic rewards. *Journal of Humanistic Psychology, 15*, 41-63. doi:10.1177/002216787501500306

References

Emmons, R. A., & McCullough, M. E. (2003). Counting blessings versus burdens: An experimental investigation of gratitude and subjective well-being in daily life. *Journal of Personality and Social Psychology, 84*, 377-389. doi:10.1037/0022-3514.84.2.377

Ferguson, E., Singh, A. P., & Cunningham-Snell, N. (1997). Stress and blood donation: Effects of music and previous donation experience. *British Journal of Psychology, 88*, 277-294. doi:10.1111/j.2044-8295.1997.tb02635.x

Fleeson, W. (2001). Toward a structure- and process-integrated view of personality: Traits as density distributions of states. *Journal of Personality and Social Psychology, 80*, 1011-1027. doi:10.1037//0022-3514.80.6.1011

Fleeson, W., & Wilt, J. (2010). The relevance of Big Five trait content in behavior to subjective authenticity: Do high levels of within-person behavioral variability undermine or enable authenticity achievement? *Journal of Personality, 78*, 1353-1382. doi:10.1111/j.1467-6494.2010.00653.x

Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. G. (2006). The international personality item pool and the future of public-domain personality measures. *Journal of Research in Personality, 40*, 84-96. doi:10.1016/j.jrp.2005.08.007

Goodman, L. A. (1960). On the exact variance of products. *Journal of the American Statistical Association, 55*, 708-713.

References

Grant, A. M., & Gino, F. (2010). A little thanks goes a long way: Explaining why gratitude expressions motivate prosocial behavior. *Journal of Personality and Social Psychology, 98*, 946-955. doi:10.1037/a0017935

Harter, S. (2002). Authenticity. In C. R. Snyder, & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 382-394). Oxford: Oxford University Press.

Heller, D., Komar, J., & Lee, W. B. (2007). The dynamics of personality states, goals, and well-being. *Personality and Social Psychology Bulletin, 33*, 898-910. doi:10.1177/0146167207301010

Heppner, W. L., Kernis, M. H., Nezlek, J. B., Foster, J., Lakey, C. E., & Goldman, B. M. (2008). Within-person relationships among daily self-esteem, need satisfaction, and authenticity. *Psychological Science, 19*, 1140-1145. doi:10.1111/j.1467-9280.2008.02215.x

Hitlin, S. (2003). Values as the core of personal identity: Drawing links between two theories of self. *Social Psychology Quarterly, 66*, 118-137. doi:10.2307/1519843

Hitlin, S. (2007). Doing good, feeling good: Values and the self's moral center. *Journal of Positive Psychology, 2*, 249-259. doi:10.1080/17439760701552352

Howell, D. C. (2007). *Statistical methods for psychology* (6th ed.). Belmont, CA: Thomson Wadsworth.

Ito, M., Horikoshi, M., & Kodama, M. (2009). A cross-sectional survey of age and sense of authenticity among Japanese. *Psychological Reports, 105*, 575-581. doi:10.2466/pr0.105.2.575-581

References

Johnson, J. T., & Boyd, K. R. (1995). Dispositional traits versus the content of experience: Actor/ observer differences in judgments of the "authentic self". *Personality and Social Psychology Bulletin, 21*, 375-383. doi:10.1177/0146167295214008

Joinson, A. N. (2001). Self-disclosure in computer-mediated communication: The role of self-awareness and visual anonymity. *European Journal of Social Psychology, 31*, 177-192. doi:10.1002/ejsp.36

Jose, P. (2008, March). Workshop on statistical mediation and moderation: Statistical mediation. Paper presented at the Society of Australasian Social Psychologists Conference, Wellington, New Zealand. Retrieved from http://www.victoria.ac.nz/sasp2008

Kaufman, J. C., & Baer, J. (2004). Sure, I'm creative - but not in mathematics!: Self-reported creativity in diverse domains. *Empirical Studies of the Arts, 22*, 143-155.

Kerlinger, F. N. (1984). *Liberalism and conservatism: The nature and structure of social attitude*s. Hillsdale, NJ: Lawrence Erlbaum.

Kernis, M. H., & Goldman, B. M. (2005). From thought and experience to behavior and interpersonal relationships: A multicomponent conceptualization of authenticity. In A. Tesser, J. V. Wood & D. A. Stapel (Eds.), *On building, defending, and regulating the self: A psychological perspectiv*e (pp. 31-52). New York: Psychology Press.

References

Kernis, M. H., & Goldman, B. M. (2006). A multicomponent conceptualization of authenticity: Theory and research. *Advances in Experimental Social Psychology, 38*, 283-357. doi:10.1016/S0065-2601(06)38006-9

Koole, S. L., & Kuhl, J. (2003). In search of the real self: A functional perspective on optimal self-esteem and authenticity. *Psychological Inquiry, 14*, 43-48.

Lenton, A. P. (2009). *Unpublished data.*

Lenton, A. P., Bruder, M., Slabu, L., & Sedikides, C. (2011). The phenomenology of state authenticity. *Manuscript Submitted for Publication.*

Lindeman, M., & Verkasalo, M. (2005). Measuring values with the Short Schwartz's Value Survey. *Journal of Personality Assessment, 8*5, 170-178. doi:10.1207/s15327752jpa8502_09

Loftus, E. F., & Palmer, J. C. (1974). Reconstruction of automobile destruction: Example of interaction between language and memory. *Journal of Verbal Learning and Verbal Behavior, 13*, 585-589. doi:10.1016/S0022-5371(74)80011-3

Lynch, M. F., & Ryan, R. M. (2004). On being yourself: Consistency versus authenticity of self-concept in cultural and interpersonal contexts. In H. W. Marsh, J. Baumert & U. Trautwein (Eds.), *Self-Concept, motivation and identity: Where to from here? Proceedings of the 3rd International Biennial Self Research Conference in Berlin.* Sydney, Australia: SELF Research Centre,

References

University of Western Sydney. Retrieved from http://www.self.ox.ac.uk/Conferences/2004_Proceedings_All_Papers.htm

Maslow, A. H. (1968). *Toward a psychology of being* (2nd ed.). Princeton, NJ: Van Nostrand.

Maslow, A. H. (1971). *The farther reaches of human nature*. New York, NY: Viking Press.

Maslow, A. H. (1994). *Religions, values, and peak-experiences*. New York, NY: Penguin Arkana.

McCrae, R. R., & Costa, P. T. (1984). Personality is transcontextual: A reply to Veroff. *Personality and Social Psychology Bulletin, 10*, 175-179. doi:10.1177/0146167284102002

McCrae, R. R., & Costa, P. T. (1994). The stability of personality: Observations and evaluations. *Current Directions in Psychological Science, 3*, 173-175. doi:10.1111/1467-8721.ep10770693

McCrae, R. R., & John, O. P. (1992). An introduction to the 5-factor model and its applications. *Journal of Personality, 60*, 175-215. doi:10.1111/j.1467-6494.1992.tb00970.x

Mednick, S. A. (1962). The associative basis of the creative process. *Psychological Review, 6*9, 220-232.

Mischel, W. (1968). *Personality and assessment*. Hoboken, NJ: John Wiley & Sons.

References

Moss, W. (2005). *The Inclusion of Other in the Self scale (IOS)*. Retrieved from http://www.haverford.edu/psych/ble/continuous_ios/originalios.html

Mussweiler, T. (2003). Comparison processes in social judgment: Mechanisms and consequences. *Psychological Review, 110*, 472-489. doi:10.1037/0033-295X.110.3.472

Privette, G. (1983). Peak experience, peak performance, and flow: A comparative-analysis of positive human experiences. *Journal of Personality and Social Psychology, 45*, 1361-1368. doi:10.1037/0022-3514.45.6.1361

Privette, G., & Bundrick, C. M. (1991). Peak experience, peak performance, and flow: Correspondence of personal descriptions and theoretical constructs. *Journal of Social Behavior and Personality, 6*(5), 169-188.

Rogers, C. R. (1961). *On becoming a person: A therapist's view of psychotherap*y. Boston: Houghton Mifflin.

Rosenberg, M. (1965). *Society and the adolescent self-imag*e. Princeton, NJ: Princeton University Press.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68-78. doi:10.1037/0003-066X.55.1.68

Ryan, R. M., & Deci, E. L. (2004). Autonomy is no illusion: Self-determination theory and the empirical study of authenticity, awareness, and will. In J.

References

Greenberg, S. L. Koole & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology* (pp. 449-479). New York, NY: Guilford Press.

Saucier, G. (1994). Mini-markers: A brief version of Goldberg unipolar big-5 markers. *Journal of Personality Assessment, 63*, 506-516. doi:10.1207/s15327752jpa6303_8

Schlegel, R. J., Hicks, J. A., Arndt, J., & King, L. A. (2009). Thine own self: True self-concept accessibility and meaning in life. *Journal of Personality and Social Psychology, 96*, 473-490. doi:10.1037/a0014060

Schlegel, R. J., Hicks, J. A., King, L. A., & Arndt, J. (2011). Feeling like you know who you are: Perceived true self-knowledge and meaning in life. *Personality and Social Psychology Bulletin, 37*, 745-756. doi:10.1177/0146167211400424

Schuler, J., & Brunner, S. (2009). The rewarding effect of flow experience on performance in a marathon race. *Psychology of Sport and Exercise, 10*, 168-174. doi:10.1016/j.psychsport.2008.07.001

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology, 25*, 1-65. doi:10.1016/S0065-2601(08)60281-6

Schwartz, S. H., & Bardi, A. (2001). Value hierarchies across cultures: Taking a similarities perspective. *Journal of Cross-Cultural Psychology, 32*, 268-290. doi:10.1177/0022022101032003002

References

Schwartz, S. H., & Boehnke, K. (2004). Evaluating the structure of human values with confirmatory factor analysis. *Journal of Research in Personality, 38*, 230-255. doi:10.1016/S0092-6566(03)00069-2

Sheldon, K. M., & Kasser, T. (2001). Goals, congruence, and positive well-being: New empirical support for humanistic theories. *Journal of Humanistic Psychology, 41*, 30-50. doi:10.1177/0022167801411004

Sheldon, K. M., Ryan, R. M., Rawsthorne, L. J., & Ilardi, B. (1997). Trait self and true self: Cross-role variation in the Big-Five personality traits and its relations with psychological authenticity and subjective well-being. *Journal of Personality and Social Psychology, 73*, 1380-1393. doi:10.1037/0022-3514.73.6.1380

Smith, C. (2003). *Moral, believing animals: Human personhood and culture*. Oxford: Oxford University Press.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.), *Sociological methodology* (pp. 290-312). Washington, DC: American Sociological Association.

Swann, W. B., Jr. (1990). To be adored or to be known: The interplay of self-enhancement and self-verification. In R. M. Sorrentino & E. T. Higgins (Eds.), *Foundations of social behavior* (pp. 408-448). New York, NY: Guilford Press.

Trilling, L. (1972). *Sincerity and authenticity*. London: Oxford University Press.

References

Verplanken, B., & Holland, R. W. (2002). Motivated decision making: Effects of activation and self-centrality of values on choices and behavior. *Journal of Personality and Social Psychology, 82*, 434. doi:10.1037/0022-3514.82.3.434

Watson, N., Bryan, B. C., & Thrash, T. M. (2010). Self-discrepancy: Comparisons of the psychometric properties of three instruments. *Psychological Assessment, 22*, 878-892. doi:10.1037/a0020644

Weinstein, N., & Ryan, R. M. (2010). When helping helps: Autonomous motivation for prosocial behavior and its influence on well-being for the helper and recipient. *Journal of Personality and Social Psychology, 98*, 222-244. doi:10.1037/a0016984

Wildschut, T., Sedikides, C., Arndt, J., & Routledge, C. (2006). Nostalgia: Content, triggers, functions. *Journal of Personality and Social Psychology, 91*, 975-993. doi:10.1037/0022-3514.91.5.975

Wilson, A. E., & Ross, M. (2001). From chump to champ: People's appraisals of their earlier and present selves. *Journal of Personality and Social Psychology, 80*, 572-584. doi:10.1037//0022-3514.80.4.572

Wood, A. M., Froh, J. J., & Geraghty, A. W. A. (2010). Gratitude and well-being: A review and theoretical integration. *Clinical Psychology Review, 30*, 890-905. doi:10.1016/j.cpr.2010.03.005

Wood, A. M., Linley, P. A., Maltby, J., Baliousis, M., & Joseph, S. (2008). The authentic personality: A theoretical and empirical conceptualization and the

References

development of the Authenticity Scale. *Journal of Counseling Psychology, 55*, 385-399. doi:10.1037/0022-0167.55.3.385

References

Appendix A: Pilot Study Web-Based Survey

Abbreviations used in Tables below:

(R)	= Reversed item
Puzzles	= Creative word puzzles
Helpers Only	= only participants in the helping condition were shown these instructions
Nonhelpers Only	= only participants in the non-helping condition were shown these instructions
Mood (PA)	= Mood (Positive Affect)
Mood (NA)	= Mood (Negative Affect)
State Wood Auth	= State version of the Wood authenticity scale
Auth Living	= Authentic living
Self-Attune	= Self-Attunement
Reject Ext Infl	= Rejecting external influence

			Measure
		Welcome	
		Welcome to this survey that looks at creativity and other aspects of personality. Thank you for taking part. Note that once you have clicked on the CONTINUE button at the bottom of each page you can not return to review or amend that page.	
1		Please read the statements below and select a number on the corresponding scale to indicate how accurately each	

		statement describes you. 1 = Strongly Disagree 7 = Strongly Agree	
1	a	I have a vivid imagination	IPIP creativity
1	b	I love to think up new ways of doing things	IPIP creativity
1	c	I seldom experience sudden intuitive insights	IPIP creativity (R)
1	d	I am full of ideas	IPIP creativity
1	e	I carry the conversation to a higher level	IPIP creativity
1	f	I often throw a new light on the situation	Insight
1	g	I have trouble guessing how others will react	IPIP creativity (R)
1	h	I do not have a good imagination	IPIP creativity (R)
1	i	I often come up with something new	IPIP creativity
1	j	I put a new perspective on things	Insight
1	k	I have excellent ideas	IPIP creativity
1	l	I have difficulty imagining things	IPIP creativity (R)

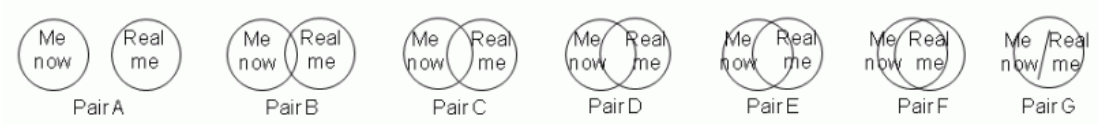
1	m	I come up with alternatives	Insight
		Creative Word Puzzles	
		In this study some participants are given the opportunity to help another person who is also completing this study. You have been randomly selected to help another person; this study is anonymous and you will not be told the name of the person you are helping, so we will call this person: Participant X. On the next screen there are some creative thinking Word Puzzle questions. By answering these questions you will help Participant X become eligible to enter a raffle. The raffle prize will be £50 of Amazon vouchers and for every question you answer Participant X will be given a raffle ticket. This means that the more questions you answer the better the chance Participant X has of winning the raffle.	Helpers Only
2		Word Puzzles	Puzzles
		Below are groupings of three words. The three words are each in some way linked with a fourth word. Can you work out the fourth word for each group? To help, all the possible answer words are listed in the drop down list. Select the correct answer for each question from the list.	

		For example, for the first question: light/ birthday/ stick you will select the answer 'candle' from the list.	
		Remember the more questions you answer the more raffle tickets Participant X will receive!	Helpers Only
2	a	light/ birthday/ stick - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
2	b	carpet/ alert/ ink - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
2	c	cream/ skate/ water - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
2	d	date/ alley/ fold - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
2	e	dew/ comb/ bee - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
2	f	dream/ break/ light - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
2	g	fish/ mine/ rush - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
2	h	fly/ clip/ wall - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
2	i	fox/ man/ peep - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
2	j	measure/ worm/ video - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
3		As before, below there are groupings of three words and you need to work out the fourth word that links them.	

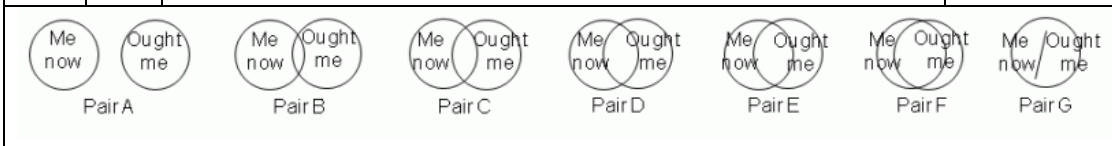
		Select the correct answer for each question from the list.	
		More answers mean more raffle tickets for Participant X.	Helpers Only
3	a	night/ wrist/ stop - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
3	b	opera/ hand/ dish - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
3	c	print/ berry/ bird - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
3	d	river/ note/ account - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
3	e	rocking/ wheel/ high - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
4	f	safety/ cushion/ point - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
4	g	sense/ courtesy/ place - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
4	h	water/ mine/ shaker - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
4	i	worm/ shelf/ end - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
5		How difficult were the Word Puzzle questions? Choose the rating that you think best reflects the level of difficulty. 1 = Very Easy 7 = Very Difficult	Puzzle difficulty

(6)		How helpful to Participant X were you? Choose the rating that you think best reflects the level of helpfulness. 1 = Not at all 5 = Extremely	Helpfulness to unknown participant Helpers Only
(7)		If you chose to help Participant X by answering the word puzzle questions what was the reason? Select from the answers listed below. *(select all that apply)* Because I like helping Because I felt I had to Because I felt I should Because I valued doing so	Helpers Only
5 (7)		In general, how helpful to other people are you? Choose the rating that you think best reflects the level of helpfulness. 1 = Not at all 7 = Extremely	General helpfulness
6		In general, when you help others what is your usual	

(8)		reason? Select from the answers listed below. *(select all that apply)* Because I like helping Because I feel I have to Because I feel I should Because I value doing so	
7 (9)		Please read the statements below and select a number on the corresponding scale that best reflects how you feel right now, that is, at the present moment. 1 = Not at all 7 = Extremely	
7 (9)	a	In a positive mood (attentive, interested, alert, excited, enthusiastic, inspired, proud, determined, strong, active)	Mood (PA)
7 (9)	b	In a negative mood (distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, afraid)	Mood (NA)
7 (9)	c	I feel I am a person of worth	State self-esteem
7 (9)	d	I feel satisfied with myself	State self-esteem
8 (10)		In each pair of circles below, the circle on the left represents who you feel yourself to be RIGHT NOW and the circle on the right represents your REAL SELF (that is, who you believe you truly are).	Real self circles

		Use the drop down list to select the pair that best represents how close you feel at this moment to your real self.	
			
9 (11)		Please read the statements below and select a number on the corresponding scale that best reflects how you feel right now, that is, at the present moment. 1 = Strongly Disagree 7 = Strongly Agree	State Wood Auth
9 (11)	a	Right now, I think it is better to be yourself than to be popular	Auth Living
9 (11)	b	Right now, I'm unsure how I'm really feeling inside	Self-Attune (R)
9 (11)	c	Right now, I'm influenced by the opinions of others	Reject Ext Infl (R)
9 (11)	d	Right now, I would happily follow instructions from others	Reject Ext Infl (R)
9 (11)	e	Right now, the expectations of others are guiding my behaviour	Reject Ext Infl (R)
9 (11)	f	Right now, I'm feeling greatly influenced by other people	Reject Ext Infl (R)
9 (11)	g	Right now, I'm feeling as if I don't know myself very well	Self-Attune (R)
9 (11)	h	Right now, I'm willing to defend my beliefs	Auth Living

9 (11)	i	Right now, I feel true to myself	Auth Living
9 (11)	j	Right now, I'm feeling out of touch with the "real me"	Self-Attune (R)
9 (11)	k	Right now, I'm behaving in accordance with my values and beliefs	Auth Living
9 (11)	l	Right now, I'm feeling distant from myself	Self-Attune (R)
10 (12)		This time, in the pairs of circles below, the circle on the left represents who you feel yourself to be RIGHT NOW and the circle on the right represents your IDEAL SELF (that is, who you would most like to be). Use the drop down list to select the pair that best represents how close you feel at this moment to your ideal self.	Ideal self circles
			
11 (13)		This time, in the pairs of circles below, the circle on the left represents who you feel yourself to be RIGHT NOW and the circle on the right represents your OUGHT SELF (that is, who you believe you have a duty or an obligation to be). Use the drop down list to select the pair that best represents how close you feel at this moment to your ought self.	ought self circles

			
		Demographic Questions	
12 (14)		Your sex	
13 (15)		Your age	
14 (16)		Your educational attainment	
15 (17)		Your country of residence	
16 (18)		Your ethnicity	
17 (19)		Your native language If your native language is not English, please indicate your command of English: Poor, Poor to Fair, Fair, Fair to Good, Good	

Appendix B: Main Study Web-Based Survey in 3 Parts

Abbreviations used in Tables below:

(R)	= Reversed item
Tr Auth	= Trait authenticity
Tr Comm	= Trait communal orientation
Tr Altr	= Trait altruism
Tr Auth Rel	= Trait authenticity: relational orientation
Tr Auth Behav	= Trait authenticity: authentic behaviour
Tr Auth Unbias	= Trait authenticity: unbiased processing
Tr Auth Aware	= Trait authenticity: accurate Awareness
Puzzles	= Creative word puzzles
Helpers Only	= only participants in the helping condition were shown these instructions
Nonhelpers Only	= only participants in the non-helping condition were shown these instructions
Mood (PA)	= Mood (Positive Affect)
Mood (NA)	= Mood (Negative Affect)
State Wood Auth	= State version of the Wood authenticity scale
Auth Living	= Authentic living
Self-Attune	= Self-Attunement
Reject Ext Infl	= Rejecting external influence
Reminder	= Manipulation reminder
Recalled Wood Auth	= Recalled state version of the Wood authenticity scale

Part 1 of Main Study Survey

			Measure
		Welcome and Prize Draw	
		Welcome to this study that looks at creative thinking and other aspects of personality. Thank you for agreeing to	

		take part. The survey has three separate parts running across about 1 month. All parts are completed by answering questions on the web. Due to the nature of the study the results will only be useful if you complete all parts, though you can skip questions if you wish. If you complete all parts of the survey you will be entered into a prize draw for £100 of Amazon vouchers. Note that once you have clicked on the CONTINUE button at the bottom of each page you can not return to review or amend that page.	
1.		Please enter your email address in the box below.	
		When you complete all parts of this survey you will be entered into a prize draw for £100 of Amazon vouchers. Your email address will only be used to match all your answers as being from the same person and to contact you about further parts of the study and with the results of the prize draw. The particular answers you give will not be known by anyone except you and your answers will remain totally anonymous. After the prize draw your email address information will not be stored and will be deleted. Your email address:	

		Confirm your email address:	
2		Listed below are several values to which people might subscribe. For each value, rate its importance as a life-guiding principle for YOUR life. -1 = Against My Principles 5 = Of Supreme Importance	Schwartz value
2	a	Power - social power, authority, wealth	
2	b	Achievement - success, capability, ambition, influence on people and events	
2	c	Hedonism - gratification of desires, enjoyment in life, self-indulgence	
2	d	Stimulation - daring, a varied and challenging life, an exciting life	
2	e	Self-Direction - creativity, freedom, curiosity, independence, choosing one's own goals	
2	f	Universalism - broadmindedness, beauty of nature and arts, social justice, a world at peace, equality, wisdom, unity with nature, environmental protection	
2	g	Benevolence - helpfulness, honesty, forgiveness, loyalty, responsibility	
2	h	Tradition - respect for tradition, humbleness, accepting one's portion in life, devotion, modesty	
2	i	Conformity - obedience, honouring parents and elders, self-discipline, politeness	
2	j	Security - national security, family security, social order, cleanliness, reciprocation of favours	

3		Please read the statements below and select a number on the corresponding scale to indicate how accurately each statement describes you. Describe yourself as you generally are NOW, and not what you wish to be like in the future. There are no right or wrong responses so please answer honestly. 1 = Strongly Disagree 7 = Strongly Agree	
3	a	I want people with whom I am close to understand my strengths	Tr Auth Rel
3	b	I anticipate the needs of others	Tr Altr
3	c	I've often used my silence or head-nodding to convey agreement with someone else's statement or position even though I really disagree	Tr Auth Behav (R)
3	d	I am willing to change myself for others if the reward is desirable enough	Tr Auth Behav (R)
3	e	I find it easy to pretend to be something other than my true self	Tr Auth Behav (R)
3	f	When making a decision, I take other people's needs and feelings into account	Tr Comm
3	g	I want people with whom I am close to understand my weaknesses	Tr Auth Rel
3	h	I look down on others	Tr Altr (R)
3	i	I make it a point to express to close others how much I truly care for them	Tr Auth Rel
3	j	People should keep their troubles to themselves	Tr Comm (R)

3	k	I tend to idealize close others rather than objectively see them as they truly are	Tr Auth Rel (R)
4		Please read the statements below and select a number on the corresponding scale to indicate how accurately each statement describes you. 1 = Strongly Disagree 7 = Strongly Agree	
4	a	I love to help others	Tr Altr
4	b	If asked, people I am close to can accurately describe what kind of person I am	Tr Auth Rel
4	c	People close to me would be shocked or surprised if they discovered what I keep inside me	Tr Auth Rel (R)
4	d	It is important for me to understand my close others' needs and desires	Tr Auth Rel
4	e	I often go out of my way to help another person	Tr Comm
4	f	I am indifferent to the feelings of others	Tr Altr (R)
4	g	I want close others to understand the real me rather than just my public persona or "image"	Tr Auth Rel
4	h	I try to act in a manner that is consistent with my personally held values, even if others criticize or reject me for doing so	Tr Auth Behav
4	i	If a close other and I are in disagreement I would rather ignore the issue than constructively work it out	Tr Auth Behav (R)
4	j	I've often done things that I don't want to do merely not to disappoint people	Tr Auth Rel (R)
4	k	I often deny the validity of any compliments that I receive	Tr Auth Unbias (R)

5		Please read the statements below and select a number on the corresponding scale to indicate how accurately each statement describes you. 1 = Strongly Disagree 7 = Strongly Agree	
5	a	I rarely if ever, put on a "false face" for others to see	Tr Auth Behav
5	b	I'm not the sort of person who often comes to the aid of others	Tr Comm (R)
5	c	I spend a lot of energy pursuing goals that are very important to other people even though they are unimportant to me	Tr Auth Behav (R)
5	d	I am concerned about others	Tr Altr
5	e	In general, I place a good deal of importance on people I am close to understanding who I truly am	Tr Auth Rel
5	f	I turn my back on others	Tr Altr (R)
5	g	If someone points out or focuses on one of my shortcomings I quickly try to block it out of my mind and forget it	Tr Auth Unbias (R)
5	h	The people I am close to can count on me being who I am regardless of what setting we are in	Tr Auth Rel
5	i	I take no time for others	Tr Altr (R)
5	j	My openness and honesty in close relationships are extremely important to me	Tr Auth Rel
5	k	I am willing to endure negative consequences by expressing my true beliefs about things	Tr Auth Behav
6		Please read the statements below and select a number on the corresponding scale to indicate how accurately each	

		statement describes you. 1 = Strongly Disagree 7 = Strongly Agree	
6	a	I am often confused about my feelings	Tr Auth Aware (R) (R)
6	b	I frequently pretend to enjoy something when in actuality I really don't	Tr Auth Behav (R)
6	c	I make people feel uncomfortable	Tr Altr (R)
6	d	For better or for worse I am aware of who I truly am	Tr Auth Aware
6	e	I understand why I believe the things I do about myself	Tr Auth Aware
6	f	I tend to have difficulty accepting my personal faults, so I try to cast them in a more positive way	Tr Auth Unbias (R)
6	g	I actively try to understand which of my self-aspects fit together to form my core or true self	Tr Auth Aware
6	h	I am very uncomfortable objectively considering my limitations and shortcomings	Tr Auth Unbias (R)
6	i	I have a very good understanding of why I do the things I do	Tr Auth Aware
6	j	I don't consider myself to be a particularly helpful person	Tr Comm (R)
6	k	I find it very difficult to critically assess myself	Tr Auth Unbias (R)
7		Please read the statements below and select a number on the corresponding scale to indicate how accurately each statement describes you.	

		1 = Strongly Disagree 7 = Strongly Agree	
7	a	I am not in touch with my deepest thoughts and feelings	Tr Auth Aware (R)
7	b	I prefer to ignore my darkest thoughts and feelings	Tr Auth Unbias (R)
7	c	I have a good word for everyone	Tr Altr
7	d	I'm not especially sensitive to other people's feelings	Tr Comm (R)
7	e	I am aware of when I am not being my true self	Tr Auth Aware
7	f	I am able to distinguish those self-aspects that are important to my core or true self from those that are unimportant	Tr Auth Aware
7	g	I don't especially enjoy giving others aid	Tr Comm (R)
7	h	When I have a need, I turn to others I know for help	Tr Comm
7	i	I find that my behaviour typically expresses my values	Tr Auth Behav
7	j	I actively attempt to understand myself as best as possible	Tr Auth Aware
7	k	I'd rather feel good about myself than objectively assess my personal limitations and shortcomings	Tr Auth Unbias (R)
8		Please read the statements below and select a number on the corresponding scale to indicate how accurately each statement describes you. 1 = Strongly Disagree 7 = Strongly Agree	

8	a	I find that my behaviour typically expresses my personal needs and desires	Tr Auth Behav
8	b	I make people feel welcome	Tr Altr
8	c	I frequently am not in touch with what's important to me	Tr Auth Aware (R)
8	d	I try to block out any unpleasant feelings I might have about myself	Tr Auth Unbias (R)
8	e	I believe it's best not to get involved taking care of other people's personal needs	Tr Comm (R)
8	f	When people get emotionally upset, I tend to avoid them	Tr Comm (R)
8	g	I often question whether I really know what I want to accomplish in my lifetime	Tr Auth Aware (R)
8	h	I often find that I am overly critical about myself	Tr Auth Unbias (R)
8	i	I am in touch with my motives and desires	Tr Auth Aware
8	j	I find it difficult to embrace and feel good about the things I have accomplished	Tr Auth Unbias (R)
9		Please read the statements below and select a number on the corresponding scale to rate your own creativity in the indicated domains. 1 = Not at all 7 = Extremely or Don’t Know	Creativity Scale for Different Domains
9	a	How creative are you in the area of science?	
9	b	How creative are you in the area of managing interpersonal relationships?	

9	c	How creative are you in the area of writing?	
9	d	How creative are you in the area of art?	
9	e	How creative are you in the area of interpersonal communication?	
9	f	How creative are you in the area of solving your own personal problems?	
9	g	How creative are you in the area of mathematics?	
9	h	How creative are you in the area of crafts (for example, woodworking, sewing, repairing things, building things, cooking, etc.)?	
9	i	How creative are you in bodily/physical movement (for example, dance, sports, etc.)?	
9	j	How creative would you say you are in general?	
		Demographic Questions	
10		Your sex	
11		Your age	
12		Your country of residence	
13		Your educational attainment	
14		Your ethnicity	
15		Your native language If your native language is not English, please indicate your command of English: Poor, Poor to Fair, Fair, Fair to Good, Good	

Part 2 of Main Study Survey

			Measure
		Welcome Back	
		Welcome back to this study that looks at creativity and other aspects of personality. This is the second part of a three part study and takes approximately 15 minutes to complete. You will again be asked for your email address. About 2 weeks after you've completed this part you'll be contacted by email with a link to the last part that will take approximately 5 minutes. Due to the nature of the study the results will only be useful if you complete all parts, and when you do you'll be entered into a prize draw for £100 of Amazon vouchers. The survey contains some small images. To be able to view the images your web browser will need to be able to view nonsecure items. If you see a browser warning message please select the option that will allow you to view nonsecure items. Your answers will remain secure and private. Thank you for your continued participation.	
1		Please enter your email address in the box below.	
		Your email address will only be used to match all your answers as being from the same person and to contact you	

		about the last part of the study and with the prize draw results. The particular answers you give will not be known by anyone except you and your answers will remain totally anonymous. After the prize draw your email address information will not be stored and will be deleted. Your email address: Confirm your email address:	
2		Please read the statements below and select a number on the corresponding scale to indicate how accurately each statement describes you. 1 = Strongly Disagree 7 = Strongly Agree	
2	a	I have a vivid imagination	IPIP creativity
2	b	I love to think up new ways of doing things	IPIP creativity
2	c	I seldom experience sudden intuitive insights	IPIP creativity (R)
2	d	I am full of ideas	IPIP creativity
2	e	I carry the conversation to a higher level	IPIP creativity
2	f	I often throw a new light on the situation	Insight
2	g	I have trouble guessing how others will react	IPIP creativity

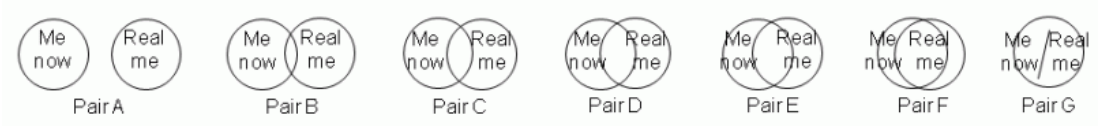
			(R)
2	h	I do not have a good imagination	IPIP creativity (R)
2	i	I often come up with something new	IPIP creativity
2	j	I put a new perspective on things	Insight
2	k	I have excellent ideas	IPIP creativity
2	l	I have difficulty imagining things	IPIP creativity (R)
2	m	I come up with alternatives	Insight
		Creative Word Puzzles	
		In this study some participants are given the opportunity to help another person who is also completing this study. You have been randomly selected to help another person; this study is anonymous and you will not be told the name of the person you are helping, so we will call this person: Participant X. On the next screen there are some creative thinking Word Puzzle questions. By answering these questions you will help Participant X become eligible to enter a raffle. This is an extra raffle, over and above the prize draw all participants enter. The raffle prize will be £50 of Amazon vouchers and for	Helpers Only

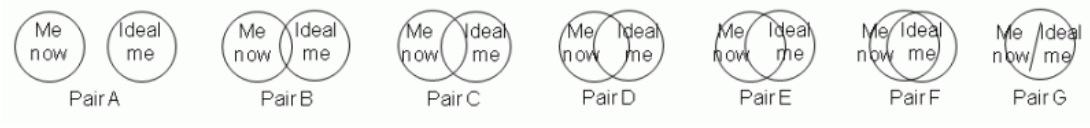
		every question you answer Participant X will be given a raffle ticket. This means that the more questions you answer the better the chance Participant X has of winning the raffle.	
3		Word Puzzles	Puzzles
		Below are groupings of three words. The three words are each in some way linked with a fourth word. Can you work out the fourth word for each group? To help, all the possible answer words are listed in the drop down list. Select the correct answer for each question from the list. For example, for the first question: light/ birthday/ stick you will select the answer 'candle' from the list.	
		Remember the more questions you answer the more raffle tickets Participant X will receive!	Helpers Only
3	a	light/ birthday/ stick - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
3	b	carpet/ alert/ ink - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
3	c	cream/ skate/ water - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
3	d	date/ alley/ fold - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
3	e	dew/ comb/ bee - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	

3	f	dream/ break/ light - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
3	g	fish/ mine/ rush - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
3	h	fly/ clip/ wall - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
3	i	fox/ man/ peep - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
3	j	measure/ worm/ video - candle, blind, day, gold, hole, honey, ice, paper, red, tape, I don't know	
4		As before, below there are groupings of three words and you need to work out the fourth word that links them. Select the correct answer for each question from the list.	
		More answers mean more raffle tickets for Participant X.	Helpers Only
4	a	night/ wrist/ stop - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
4	b	opera/ hand/ dish - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
4	c	print/ berry/ bird - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
4	d	river/ note/ account - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
4	e	rocking/ wheel/ high - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
4	f	safety/ cushion/ point - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	

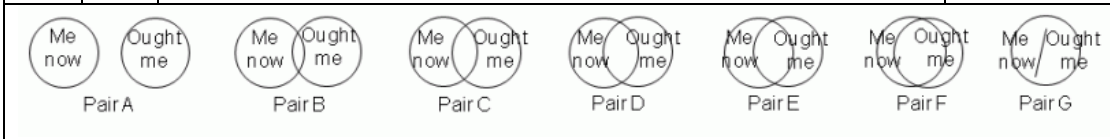
4	g	sense/ courtesy/ place - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
4	h	water/ mine/ shaker - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
4	i	worm/ shelf/ end - bank, blue, book, chair, common, pin, salt, soap, watch, I don't know	
5		This is the final block of Word Puzzle questions. Select the correct answer for each question from the list.	
5	a	break/ bean/ cake - air, coffee, copy, fast, green, party, stock, under, writer, I don't know	
5	b	cover/ arm/ wear - air, coffee, copy, fast, green, party, stock, under, writer, I don't know	
5	c	food/ forward/ break - air, coffee, copy, fast, green, party, stock, under, writer, I don't know	
5	d	force/ line/ mail - air, coffee, copy, fast, green, party, stock, under, writer, I don't know	
5	e	house/ thumb/ pepper - air, coffee, copy, fast, green, party, stock, under, writer, I don't know	
5	f	pile/ market/ room - air, coffee, copy, fast, green, party, stock, under, writer, I don't know	
5	g	political/ surprise/ line - air, coffee, copy, fast, green, party, stock, under, writer, I don't know	
5	h	right/ cat/ carbon - air, coffee, copy, fast, green, party, stock, under, writer, I don't know	
5	i	type/ ghost/ screen - air, coffee, copy, fast, green, party, stock, under, writer, I don't know	

6		How difficult were the Word Puzzle questions? Choose the rating that you think best reflects the level of difficulty. 1 = Extremely Easy 7 = Extremely Difficult	Puzzle difficulty
7		In general, how helpful to other people are you? Choose the rating that you think best reflects the level of helpfulness. 1 = Not at all 7 = Extremely	General helpfulness
8		Please read the statements below and select a number on the corresponding scale that best reflects how you feel right now, that is, at the present moment. 1 = Not at all 7 = Extremely	
8	a	In a positive mood (attentive, interested, alert, excited, enthusiastic, inspired, proud, determined, strong, active)	Mood (PA)
8	b	In a negative mood (distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, afraid)	Mood (NA)
8	c	I feel I am a person of worth	State Self-Esteem
8	d	I feel satisfied with myself	State Self-Esteem

9		In each pair of circles below, the circle on the left represents who you feel yourself to be RIGHT NOW and the circle on the right represents your REAL SELF. Your REAL SELF is who you truly are (which may not necessarily be the same as you would like to be). Use the drop down list to select the pair that best represents how close you feel at this moment to your real self.	Real self circles
			
10		Please read the statements below and select a number on the corresponding scale that best reflects how you feel right now, that is, at the present moment. 1 = Strongly Disagree 7 = Strongly Agree	State Wood Auth
10	a	Right now, I think it is better to be yourself than to be popular	Auth Living
10	b	Right now, I'm unsure how I'm really feeling inside	Self-Attune (R)
10	c	Right now, I'm influenced by the opinions of others	Reject Ext Infl (R)
10	d	Right now, I would happily follow instructions from others	Reject Ext Infl (R)

10	e	Right now, the expectations of others are guiding my behaviour	Reject Ext Infl (R)
10	f	Right now, I'm feeling greatly influenced by other people	Reject Ext Infl (R)
10	g	Right now, I'm feeling as if I don't know myself very well	Self-Attune (R)
10	h	Right now, I'm willing to defend my beliefs	Auth Living
10	i	Right now, I feel true to myself	Auth Living
10	j	Right now, I'm feeling out of touch with the "real me"	Self-Attune (R)
10	k	Right now, I'm behaving in accordance with my values and beliefs	Auth Living
10	l	Right now, I'm feeling distant from myself	Self-Attune (R)
11		This time, in the pairs of circles below, the circle on the left represents who you feel yourself to be RIGHT NOW and the circle on the right represents your IDEAL SELF (that is, who you would most like to be). Use the drop down list to select the pair that best represents how close you feel at this moment to your ideal self.	Ideal self circles
			
12		This time, in the pairs of circles below, the circle on the	ought self

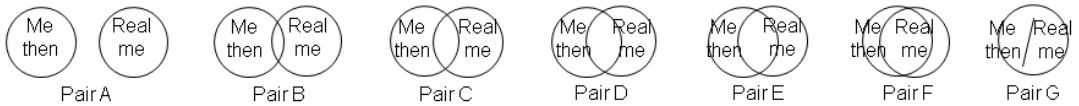
		left represents who you feel yourself to be RIGHT NOW and the circle on the right represents your OUGHT SELF (that is, who you believe you have a duty or an obligation to be). Use the drop down list to select the pair that best represents how close you feel at this moment to your ought self.	circles



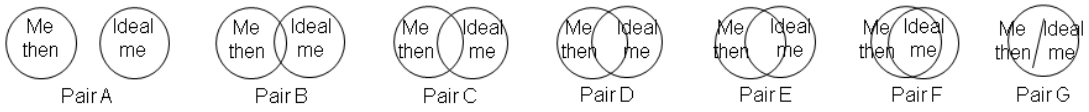
Part 3 of Main Study Survey

			Measure
		Welcome back	
		Welcome back to this study that looks at creativity and other aspects of personality. This is the third and final part of the study and takes approximately 5 minutes to complete. Thank you for your participation.	
1		Please enter your email address in the box below.	
		Your email address will only be used to match all your answers as being from the same person and to contact you with the results of the prize draw. The particular answers you give will not be known by anyone except you and your answers will remain totally anonymous. After the prize draw your email address information will not be stored and will be deleted. Your email address: Confirm your email address:	
2		As you'll probably remember, in the last part of the survey	Reminder

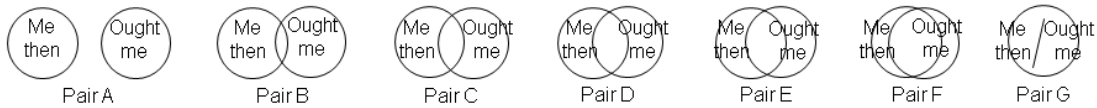
		you were asked if you would help Participant X enter a raffle by answering some Word Puzzle questions. You were given a group of three words and asked to select a fourth word that linked them all. For example, for the group: light/ birthday/ stick you would have selected the answer 'candle' from the list. In the box below write a short description of what you were thinking and how you felt when you helped Participant X by answering the Word Puzzle questions.	Helpers Only
2		As you'll probably remember, in the last part of the survey you were asked if you would answer some Word Puzzle questions. You were given a group of three words and asked to select a fourth word that linked them all. For example, for the group: light/ birthday/ stick you would have selected the answer 'candle' from the list. In the box below write a short description of what you were thinking and how you felt when you were answering the Word Puzzle questions.	Reminder Nonhelpers Only
3		How close did you feel to your real (true) self when you were helping Participant X by answering the Word Puzzle questions? In each pair of circles below, the circle on the left represents who you felt yourself to be when you were	Recalled real self circles Helpers

		answering the questions and the circle on the right represents your REAL SELF. Your REAL SELF is who you truly are (which may not necessarily be the same as you would like to be). Use the drop down list to select the pair of circles that best represents how close you felt to your real self when you were helping Participant X by answering the Word Puzzle questions.	Only
3		How close did you feel to your real (true) self when you were answering the Word Puzzle questions? In each pair of circles below, the circle on the left represents who you felt yourself to be when you were answering the questions and the circle on the right represents your REAL SELF. Your REAL SELF is who you truly are (which may not necessarily be the same as you would like to be). Use the drop down list to select the pair of circles that best represents how close you felt to your real self when you were answering the Word Puzzle questions.	Recalled real self circles Nonhelpers Only
			
4		Read the statements below and select a number on the	Recalled

		corresponding scale that best reflects how close you felt to your real self when you helped Participant X by answering those Word Puzzle questions.	Wood Auth Helpers Only
4		Read the statements below and select a number on the corresponding scale that best reflects how close you felt to your real self when you were answering those Word Puzzle questions.	Recalled Wood Auth Nonhelpers Only
4	a	I thought it was better to be myself than to be popular	
4	b	I was unsure how I really felt inside	(R)
4	c	I was influenced by the opinions of others	(R)
4	d	I would have happily followed instructions from others	(R)
4	e	The expectations of others were guiding my behaviour	(R)
4	f	I felt greatly influenced by other people	(R)
4	g	I felt as if I didn't know myself very well	(R)
4	h	I was willing to defend my beliefs	
4	i	I felt true to myself	
4	j	I felt out of touch with the "real me"	(R)
4	k	I was behaving in accordance with my values and beliefs	
4	l	I felt distant from myself	(R)
5		This time, in the pairs of circles below, the circle on the left represents who you felt yourself to be when you were helping Participant X by answering the Word Puzzle	Recalled ideal self circles

		questions and the circle on the right represents your IDEAL SELF (that is, who you would most like to be). Use the drop down list to select the pair of circles that best represents how close you felt to your ideal self when you were helping Participant X by answering the Word Puzzle questions.	Helpers Only
		This time, in the pairs of circles below, the circle on the left represents who you felt yourself to be when you were answering the Word Puzzle questions and the circle on the right represents your IDEAL SELF (that is, who you would most like to be). Use the drop down list to select the pair of circles that best represents how close you felt to your ideal self when you were answering the Word Puzzle questions.	Recalled ideal self circles Nonhelpers Only
			
6		This time, in the pairs of circles below, the circle on the left represents who you felt yourself to be when you were helping Participant X by answering the Word Puzzle questions and the circle on the right represents your OUGHT SELF (that is, who you believe you have a duty or an obligation to be).	Recalled ought self circles Helpers Only

		Use the drop down list to select the pair of circles that best represents how close you felt to your ought self when you were helping Participant X by answering the Word Puzzle questions.	
6		This time, in the pairs of circles below, the circle on the left represents who you felt yourself to be when you were answering the Word Puzzle questions and the circle on the right represents your OUGHT SELF (that is, who you believe you have a duty or an obligation to be). Use the drop down list to select the pair of circles that best represents how close you felt to your ought self when you were answering the Word Puzzle questions.	Recalled ought self circles Nonhelpers Only



Appendix C: Ideal Self Circles and Ought Self Circles Analysis

Between 0 and 5 outliers were removed. A 2 (condition) x 2 (recall) mixed ANOVA was used to analyse the effects of condition and recall, firstly, on ideal self circle measures and then on ought self circle measures (descriptive statistics provided in Table 1).

No significant main effect of condition was found for ideal self (Table 2). There was a main effect of recall for ideal self; typically closeness to ideal self increased with recall. In a similar pattern to the real self circles results, this effect was qualified by the condition x recall interaction, showing that, whilst closeness to ideal self increased with recall, helpers' recalled ideal self increased more than non-helpers' (Table 2).

Subsequent independent-samples t-tests indicated no difference for ideal self closeness between helpers and non-helpers pre-recall, but post-recall helpers had significantly higher recalled ideal self than non-helpers (Table 1). This is the same pattern of results as seen for the real self circles measure, and again suggests that, at the time, the act of helping had no effect on helpers' feelings of closeness to their ideal self. Instead there was a delayed response to the effect of helping that led to greater increases in recalled ideal self.

A marginally significant main effect of condition was found for ought self, indicating that helpers typically felt somewhat closer to their ought self than non-helpers (Table 2). There was a main effect of recall for ought self, with closeness to ought self typically increasing with recall. In a similar pattern to the real self circles and ideal self circles results, this effect was qualified by the condition x recall interaction, showing that, whilst feelings of closeness to the ought self increased with recall, helpers increased more than non-helpers (Table 2).

Subsequent independent-samples t-tests for ought self showed the same pattern of results (Table 1) as seen for real self circles and ideal self circles measures. Again this suggests that, at the time, the act of helping had no effect on helpers' feelings of closeness to their ought self. Instead there was a delayed response to the effect of helping that led to greater increases in recalled ought self.

Table 1

Differences Between Non-helpers and Helpers in Pre- and Post-Recall for Ideal Self and Ought Self

	Non-helpers	Helpers				
Variable	*M (SD)*	*M (SD)*	*df*	*t*	*p*	Cohen's *d*
Ideal self: non-helpers vs helpers						
Pre-recall	4.21 (1.81)	4.09 (1.63)	223	0.519	.604	0.07
Post-recall	4.95 (1.68)	5.47 (1.64)	211	2.313	.022	0.31
Ought self: non-helpers vs helpers						
Pre-recall	4.45 (1.83)	4.41 (1.83)	222	0.338	.736	0.04
Post-recall	4.90 (1.89)	5.68 (1.55)	211	3.301	.001	0.45

Appendices

Table 2

Analysis of Variance Results for Main Effects of Condition and Recall and Interaction Effects of Recall x Condition on Ideal Self and Ought Self

Variable and Source	*df*	*F*	*p*	*Partial η2*
Ideal self				
Condition	1, 210	1.080	.300	.005
Recall	1, 210	69.154	<.001	.248
Recall x condition	1, 210	6.429	.012	.030
Ought self				
Condition	1, 211	3.395	.067	.016
Recall	1, 211	38.575	<.001	.155
Recall x condition	1, 211	8.680	.004	.040

Mediation

Given the similarity in the pattern of results of the ideal self circles and real self circles it is possible that the ideal self is playing a mediating role between condition and recalled real self, such that helping activates the ideal self which, in turn, activates "feeling real". Such a mediating role could result from self-enhancement biases (Swann, 1990).

Testing for the mediating effect of recalled ideal self followed the linear regression model detailed by Baron and Kenny (1986). Outliers with standardized residuals greater than an absolute value of 3 were excluded. Cases that fell outside the upper and lower limits of acceptable values for the covariance ratio were also removed (upper limit = 1 plus 3 times the average leverage; lower limit = 1 minus 3 times the average leverage). (Cooks distance, leverage, Mahalanobis distance and DFBetas were also calculated but did not identify outliers). Fourteen outliers were removed.

As required as a prerequisite for mediation (Baron & Kenny, 1986), there were significant correlations between condition and recalled ideal self and between recalled ideal self and recalled real self (Table 3). For mediation to be shown, each of the following conditions also must be met: (a) variations in condition significantly account for variations in ideal self (mediator); (b) variations in recalled ideal self significantly account for variations in recalled real self (criterion); and (c) variations in condition significantly account for variations in recalled real self. These relationships were found to be significant (Table 4). If mediation is present, the effect of condition as predictor of recalled real self should weaken once recalled ideal self is added to the model. Table 4 shows that with condition as sole predictor of recalled real self this relationship was significant; however, this relationship dropped to non-significance once recalled ideal self was controlled, thus indicating full mediation by recalled ideal self. These results support the hypothesis that recalled ideal self plays a mediating role between condition and recalled real self.

Table 3

Intercorrelations for Mediating Pathway Variables

Measure	1	2	3
1. Condition	-		
2. Recalled ideal self	.153*	-	
3. Recalled real self	.184**	.640**	-

*$p < .05$. **$p < .01$.

Table 4

Regression Analysis for mediation models

Pathway	Predictor	β	*SE* β	*t*	*p*
Recalled real self as criterion					
Predicting recalled ideal self by condition	Condition	0.219	0.069	3.193	.002
Predicting recalled real self by condition	Condition	0.216	0.070	3.099	.002
Predicting recalled real self by both condition and recalled ideal self	Condition	0.082	0.054	1.505	.134
	Recalled Ideal Self	0.643	0.055	11.767	<.001
Recalled ideal self as criterion					
Predicting recalled real self by condition	Condition	0.171	0.068	2.497	.013
Predicting recalled ideal self by condition	Condition	0.247	0.069	3.571	<.001
Predicting recalled ideal self by both condition and recalled real self	Condition	0.114	0.060	1.913	.057
	Recalled real Self	0.556	0.059	9.373	<.001

Appendices

To formally confirm mediation the Sobel (1982) test was used to test the significance of the indirect mediating pathway: effect of condition on recalled real self via recalled ideal self, test parameters are provided in Table 5. Sobel states that for large samples (here N = 198) the t ratio is normally distributed which leads to rejection of the null hypothesis at $\alpha = 0.05$ when the ratio exceeds +/- 1.96. Therefore, here the mediating pathway ($t = 3.092$) was significant. Overall, the results provide good evidence for the main influence of condition on recalled real self to have acted through the mediation of recalled ideal self.

Table 5

Sobel Test Parameters

Mediating pathway	β	*SE* β[a]	*t*
Indirect effect of condition on recalled real self via recalled ideal self	0.141	0.046	3.092
Indirect effect of condition on recalled real self via recalled ought self	0.095	0.039	2.426

[a]The Sobel test equation, *SE* β, was calculated using the Goodman (1960) method as recommended by Howell (2007).

However, Cole and Maxwell (2003) have argued that concurrent mediation can not support a causal interpretation and Jose (2008) argues that mediation analyses should be re-run for different potential models to better understand the relationships between the variables. It has also been suggested that this relationship could run in the opposite direction, with feeling real contributing to feeling ideal (Lenton et al., 2011). Therefore, the analyses above was repeated, but with the mediating pathway inverted, such that, recalled ideal self was the criterion variable and recalled real self the potential mediator. Seven outliers were removed.

All the necessary conditions for mediation were met again (Table 4). When condition was the sole predictor of recalled ideal self this relationship was significant but dropped to non-significant once recalled real self was added to the model, thus

indicating full mediation by recalled real self (Table 4). The Sobel test also confirmed the mediating pathway was significant (Table 5). Therefore there is now conflicting evidence for recalled real self to be mediating the effects of condition on recalled ideal self.

Appendices

Appendix D: Additional Tables

Table 1

Differences Between Non-helpers and Helpers for State Authenticity Measures

	Non-helpers		Helpers					
Variable	*M*	*SD*	*M*	*SD*	*df*	*t*	*p*	Cohen's *d*
Real self circles	5.05	1.67	5.08	1.71	217	0.103	.918	0.02
Wood authenticity	5.04	1.03	5.20	0.85	221	1.271	.205	0.17

Table 2

Differences Between Non-helpers and Helpers for State Authenticity Measures with Participants with Less Than 70% Puzzles Correct

	Non-helpers		Helpers					
Variable	*M*	*SD*	*M*	*SD*	*df*	*t*	*p*	Cohen's *d*
Real self circles	5.08	1.65	5.13	1.68	211	0.221	.826	0.03
Wood authenticity	5.04	1.03	5.24	0.82	214	1.591	.113	0.21

Table 3

Descriptive Statistics for Schwartz Value-Types

Schwartz Value-type	*N*	*M*	*SD*
Benevolence	226	4.26	0.83
Self-direction	224	4.01	1.00
Universalism	225	3.84	1.17
Achievement	225	3.08	1.10
Security	226	2.99	1.20
Stimulation	220	294	1.29
Conformity	223	2.48	1.41
Tradition	225	2.39	1.53
Hedonism	226	2.19	1.42
Power	226	1.47	1.27

Appendices